Release Notes for VSP Operating System Software

Release 4.2.1
NN47227-401
Issue 06.05
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Contents

Chapter 1: Introduction

Purpose

This document provides information on features in VSP Operating System Software (VOSS). VOSS runs on the following product families:

- Avaya Virtual Services Platform 4000 Series
- Avaya Virtual Services Platform 7200 Series
- Avaya Virtual Services Platform 8000 Series

This document describes important information about this release for the VOSS products.

These Release Notes include supported hardware and software, scaling capabilities, and a list of known issues (including workarounds, where appropriate). This document also describes known limitations and restrictions.

Related resources

Documentation

See *Documentation Roadmap for Avaya Virtual Services Platform 4000 Series*, NN46251-100 and *Documentation Reference for Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-100 for a list of the documentation for these products.

Training

Ongoing product training is available. For more information or to register, you can access the Web site at http://avaya-learning.com/.

Viewing Avaya Mentor videos

Avaya Mentor videos provide technical content on how to install, configure, and troubleshoot Avaya products.

About this task

Videos are available on the Avaya Support website, listed under the video document type, and on the Avaya-run channel on YouTube.

Procedure

- To find videos on the Avaya Support website, go to http://support.avaya.com and perform one of the following actions:
  - In **Search**, type `Avaya Mentor Videos` to see a list of the available videos.
  - In **Search**, type the product name. On the Search Results page, select **Video** in the **Content Type** column on the left.
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  - Enter a key word or key words in the **Search Channel** to search for a specific product or topic.
  - Scroll down Playlists, and click the name of a topic to see the available list of videos posted on the website.

Note:

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Subscribe to e-notifications to receive an email notification when documents are added to or changed on the Avaya Support website.

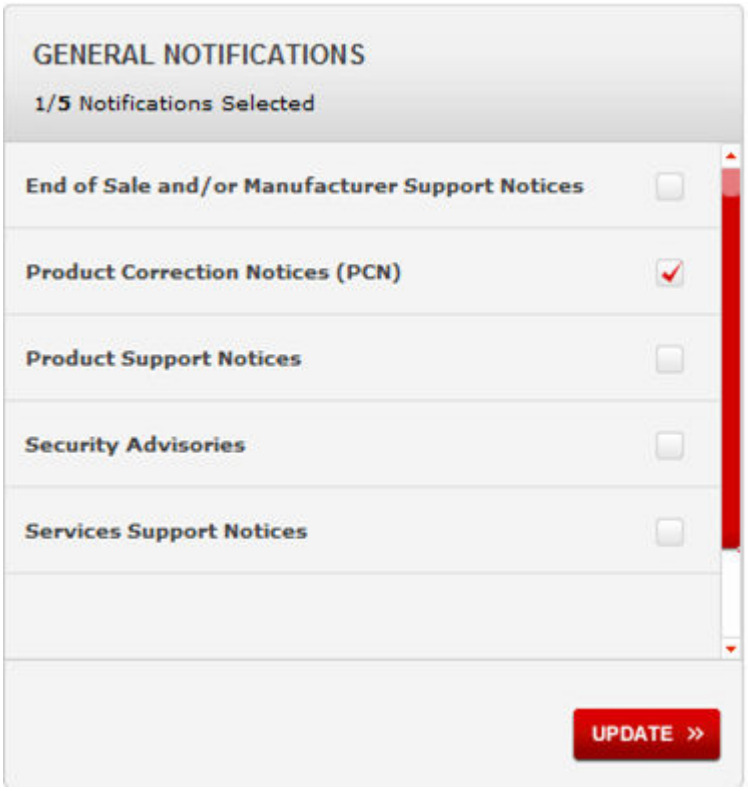
About this task

You can subscribe to different types of general notifications, for example, Product Correction Notices (PCN), which apply to any product or a specific product. You can also subscribe to specific types of documentation for a specific product, for example, Application & Technical Notes for Virtual Services Platform 7000.

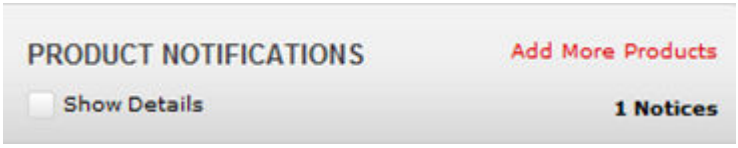
Procedure

1. In an Internet browser, go to https://support.avaya.com.
2. Type your username and password, and then click **Login**.
3. Under **My Information**, select **SSO login Profile**.
4. Click **E-NOTIFICATIONS**.

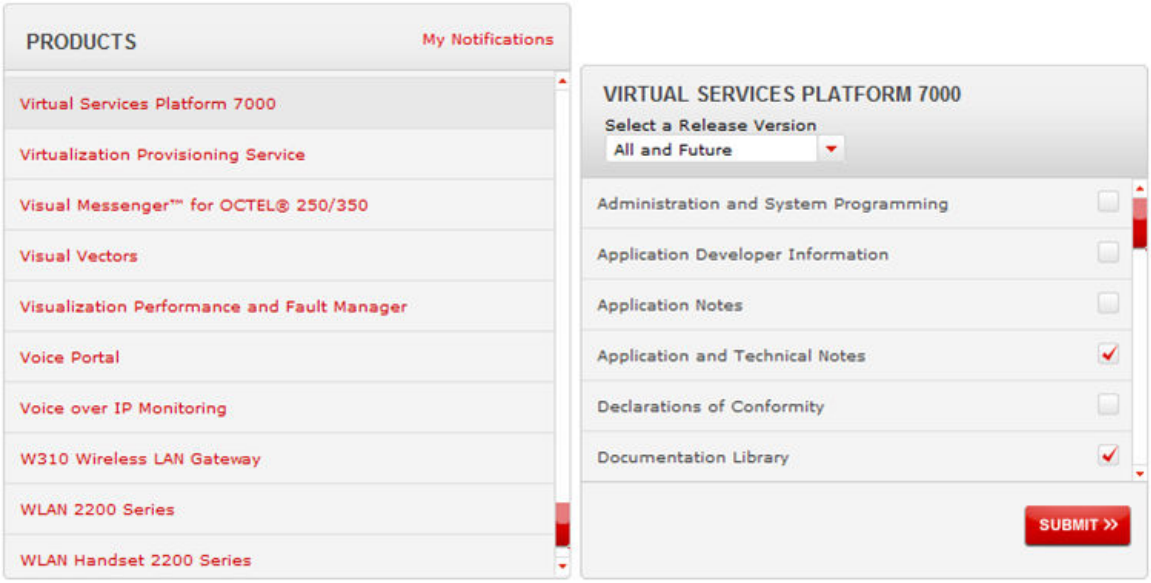
5. In the GENERAL NOTIFICATIONS area, select the required documentation types, and then click **UPDATE**.



6. Click **OK**.
7. In the PRODUCT NOTIFICATIONS area, click **Add More Products**.



8. Scroll through the list, and then select the product name.
9. Select a release version.
10. Select the check box next to the required documentation types.



11. Click **Submit**.

Support

Go to the Avaya Support website at http://support.avaya.com for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes, downloads, and resolutions to issues. Use the online service request system to create a service request. Chat with live agents to get answers to questions, or request an agent to connect you to a support team if an issue requires additional expertise.

Searching a documentation collection

On the Avaya Support website, you can download the documentation library for a specific product and software release to perform searches across an entire document collection. For example, you can perform a single, simultaneous search across the collection to quickly find all occurrences of a particular feature. Use this procedure to perform an index search of your documentation collection.

Before you begin

- Download the documentation collection zip file to your local computer.
- You must have Adobe Acrobat or Adobe Reader installed on your computer.

Procedure

1. Extract the document collection zip file into a folder.
2. Navigate to the folder that contains the extracted files and open the file named <*product_name_release*>.pdx.

3. In the Search dialog box, select the option **In the index named <*product_name_release*>.pdx**.
4. Enter a search word or phrase.
5. Select any of the following to narrow your search:
   - Whole Words Only
   - Case-Sensitive
   - Include Bookmarks
   - Include Comments
6. Click **Search**.

   The search results show the number of documents and instances found. You can sort the search results by Relevance Ranking, Date Modified, Filename, or Location. The default is Relevance Ranking.

Chapter 2: New in this release

The following sections detail what is new in *Release Notes for VSP Operating System Software*, NN47227-401.

Features

See the following sections for information about feature changes.

New hardware

Important:

VOSS 4.2.1 does not include support for VSP 4450GSX-DC introduced in VSP 4000 Series Release 4.0.50. This model will be supported in Release 4.2.1.1.

VOSS 4.2.1 introduces the following new hardware:

- VSP 7200 Series:

  Avaya Virtual Services Platform 7200 Series is a new family of high-performance Ethernet Switches that delivers 10/40 Gigabit Ethernet connectivity, optimized for the Data Center Top-of-Rack.

  - VSP 7254XSQ — forty eight 1/10 GbE SFP/SFP+ ports plus six 40 GbE QSFP+ ports.
  - VSP 7254XTQ — forty eight 100 Mbps/1 GbE/10 GbE RJ-45 ports plus six 40 GbE QSFP+ ports.

  For more information, see *Installing the Avaya Virtual Services Platform 7200 Series*, NN47228-302.

- VSP 8000 Series

  - VSP 8284XSQ DC is a variant of Avaya Virtual Services Platform 8200 that ships with DC power supplies. It was introduced in Release 4.0.50, but not supported in Release 4.1 and 4.2. It is now fully supported in Release 4.2.1.
  - VSP 8404DC is a variant of Avaya Virtual Services Platform 8400 that ships with DC power supplies. It is new to VOSS 4.2.1.

  For more information, see *Installing the Avaya Virtual Services Platform 8000 Series*, NN47227-300

- New 40 Gigabit Ethernet QSFP+ Transceivers:

  - 40GBASE-LM4 QSFP+, AA1404002-E6

Note:

AA1404002-E6 does not apply to the Avaya Virtual Services Platform 4000 Series.

The reach for this QSFP+ transceiver is up to 80 meters.

- 40GBASE-ER4 QSFP+, AA1404003-E6

Note:

AA1404003-E6 does not apply to the Avaya Virtual Services Platform 4000 Series.

For more information, see *Installing Transceivers and Optical Components on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-301

- New 40 Gigabit Ethernet QSFP+ cables:
  - QSFP+ to QSFP+ 10 meter active direct attach cable (DAC) (AA1404028-E6)
  - QSFP+ to 4 SFP+ 10 meter active-optical break out cable (BOC) (AA1404041-E6)

  For more information, see *Installing Transceivers and Optical components on Avaya Virtual Services Platform 4000 Series*, NN46251-301 and *Installing Transceivers and Optical Components on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-301
- New 10 Gigabit Ethernet SFP+ transceiver:
  - 10GBASE-BX SFP+ Bi-directional 10 km (AA1403169, AA1403170 TX/RX pair)

  For more information, see *Installing Transceivers and Optical components on Avaya Virtual Services Platform 4000 Series*, NN46251-301 and *Installing Transceivers and Optical Components on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-301

EAPoL enhancements

The EAPoL authenticator functionality in VOSS 4.2.1 is updated to be consistent with IEEE-802.1X-2010 standard. The current VOSS software is backward compatible with older versions of EAPoL.

Note:

VOSS 4.2.1 supports single host single authentication (SHSA) with the ability to support EAP or NEAP clients.

For more information, see the following documents:

- *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601
- *Performance Management of Avaya Virtual Services Platform 4000 Series*, NN46251-701
- *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601
- *Monitoring Performance on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-701

EDM Updates

EDM support is added for the features identified in the following table.

Feature	Document
Enhanced secure mode	*Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600
IPsec	*Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 *Performance Management of Avaya Virtual Services Platform 4000 Series*, NN46251-701 *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601 *Monitoring Performance on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-701 *Configuring IPv6 Routing on VSP Operating System Software*, NN47227-507
RMON 2	*Performance Management of Avaya Virtual Services Platform 4000 Series*, NN46251-701 *Monitoring Performance on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-701

Non EAPoL MAC RADIUS authentication

VOSS 4.2.1 supports Non-EAP (NEAP) hosts on EAP-enabled ports. For an EAPoL-enabled port configured for non-EAPoL host support, users or devices that do not support EAP will be authenticated based on the MAC address.

Note:

In VOSS 4.2.1, EAPoL enabled ports operate in Single Host Single Authentication (SHSA) mode only. There can be a maximum of one client (EAP or NEAP) on a EAPoL enabled port.

For more information, see *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 and *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601.

Route preference protocol ACLI changes

VOSS 4.2.1 changes the route preference protocol commands to separate IPv6 configuration from IPv4 configuration.

The following commands are now obsolete:

- **`ip route preference protocol staticv6`**
- **`ip route preference protocol ospfv3-intra`**
- **`ip route preference protocol ospfv3-inter`**
- **`ip route preference protocol ospfv3-extern1`**

- **ip route preference protocol ospfv3-extern2**
- **ip route preference protocol spbmv6-level1**

Note:

For backward compatibility, if you used one of the preceding commands to configure IPv6 route preference in a release earlier than VOSS 4.2.1, and upgrade to 4.2.1 or later, the software still processes the IPv6 route preference command with IPv6 route owner types. This function only applies at configuration source time, not for normal runtime configuration.

The following commands are new:

- **ipv6 route preference protocol static**
- **ipv6 route preference protocol ospfv3-intra**
- **ipv6 route preference protocol ospfv3-inter**
- **ipv6 route preference protocol ospfv3-extern1**
- **ipv6 route preference protocol ospfv3-extern2**
- **ipv6 route preference protocol spbm-level1**
- **show ipv6 route preference**

For more information, see the following documents:

- *Commands Reference for Avaya Virtual Services Platform 4000 Series*, NN46251-104
- *ACLI Commands Reference for Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-104
- *Configuring IP Routing on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-505
- *Configuring IPv6 Routing on VSP Operating System Software*, NN47227-507
- *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510

Transparent UNI

VOSS 4.2.1 adds support for the Transparent UNI feature. Transparent UNI configures a transparent port where all traffic is MAC switched on an internal virtual port using the assigned I-SID. No VLAN is involved in this process. Devices switch tagged and untagged traffic in the assigned I-SID regardless of the VLAN ID. The T-UNI port or MLT is not a member of any VLAN or STG and is always in the forwarding state.

You can map multiple ports to a T-UNI I-SID. Multiple ports on the same switch and on other BEBs can use the common I-SID to switch traffic.

This feature is new in VOSS 4.2.1 for VSP 7200 Series and VSP 8000 Series to provide feature parity with VSP 4000 Series.

For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.

New ACLI command to upgrade the boot loader image

VOSS 4.2.1 adds an advanced-level command that upgrades the device uboot image.

Warning:

Only use this command if specifically advised to do so by Avaya Support. Improper use of this command can result in permanent damage to the device and render it unusable.

For more information, see Upgrading the boot loader image on page 66.

Update to ifDescr MIB

The output string returned by SNMP MIB ifDescr (.1.3.6.1.2.1.2.2.1.2) now includes Platform and Module description.

Overview of features by release and platform

This section provides an overview of which release introduced feature support for a particular platform. Each new release for a platform includes all the features from previous releases unless specifically stated otherwise.

Note:

4.1 is the first VOSS release. Release numbers earlier than 4.1 are releases specific to the particular platform.

Feature introduction

For more information about features and their configuration, see the documents listed in the respective sections.

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
Operations and management				
Avaya CLI (ACLI) For more information, see the following documents: • *User Interface Fundamentals for Avaya Virtual Services Platform 4000 Series*, NN46251-103 • *Using ACLI and EDM on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-103	3.0	4.2.1	4.0	4.2
Channelization of 40 Gbps ports For more information, see *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600.	N/A	4.2.1	4.2	4.2
Configuration and Orchestration Manager (COM) For more information, see Avaya Configuration and Orchestration Manager (COM) documentation, http://support.avaya.com/.	3.0	4.2.1	4.0	4.2
Domain Name Service (DNS) client (IPv4)	3.0	4.2.1	4.0	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600				
DNS client (IPv6) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	4.1	4.2.1	4.1	4.2
The encryption modules file is included in the runtime software image file; it is not a separate file.	4.2	4.2.1	4.2	4.2
Enhanced Secure mode For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	4.2	4.2.1	4.2	4.2
Enterprise Device Manager (EDM) For more information, see the following documents: • *User Interface Fundamentals for Avaya Virtual Services Platform 4000 Series*, NN46251-103 • *Using ACLI and EDM on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-103	3.0	4.2.1	4.0	4.2
EDM representation of physical LED status For more information, see the following documents: • *Installing Avaya Virtual Services Platform 4850GTS Series*, NN46251-300 • *Installing Avaya Virtual Services Platform 4450GTX-HT-PWR +Switch*, NN46251–304 • *Installing Avaya Virtual Services Platform 4450GSX-PWR+ Switch*, NN46251-307 • *Installing the Avaya Virtual Services Platform 7200 Series*, NN47228-302	3.0	4.2.1	4.2	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
• *Installing the Avaya Virtual Services Platform 8000 Series*, NN47227-300				
File Transfer Protocol (FTP) server/client (IPv4) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	3.0	4.2.1	4.0	4.2
FTP server/client (IPv6) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	4.1	4.2.1	4.1	4.2
Flight Recorder (for system health monitoring) For more information, see the following documents: • *Troubleshooting of Avaya Virtual Services Platform 4000 Series*, NN46251-700 • *Troubleshooting Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-700	3.0	4.2.1	4.0	4.2
IEEE 802.1ag Connectivity Fault Management (CFM) • Layer 2 Ping • TraceRoute • TraceTree For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	3.1	4.2.1	4.0	4.2
Extensible Authentication Protocol (EAP) and EAP over LAN (EAPoL) For more information, see the following documents: • *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 • *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601	4.1	4.2.1	4.1	4.2
Key Health Indicator (KHI)	3.0	4.2.1	4.0	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
For more information, see the following documents: • *Fault Management of Avaya Virtual Services Platform 4000 Series*, NN46251-702 • *Managing Faults on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-702				
Logging (log to file and syslog [IPv4]) For more information, see the following documents: • *Fault Management of Avaya Virtual Services Platform 4000 Series*, NN46251-702 • *Managing Faults on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-702	3.0	4.2.1	4.0	4.2
Logging (log to file and syslog [IPv6]) For more information, see the following documents: • *Fault Management of Avaya Virtual Services Platform 4000 Series*, NN46251-702 • *Managing Faults on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-702	4.1	4.2.1	4.1	4.2
Mirroring (port and flow-based) For more information, see the following documents: • *Troubleshooting of Avaya Virtual Services Platform 4000 Series*, NN46251-700 • *Troubleshooting Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-700	3.0	4.2.1	4.0	4.2
Network Time Protocol (NTP) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	3.0	4.2.1	4.0	4.2
Non EAPoL MAC RADIUS authentication For more information, see the following documents: • *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 • *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601	4.2.1	4.2.1	4.2.1	4.2.1

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
RADIUS, community-based users (IPv4) For more information, see the following documents: • *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 • *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601	3.0	4.2.1	4.0	4.2
RADIUS (IPv6) For more information, see the following documents: • *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 • *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601	4.1	4.2.1	4.1	4.2
Remote Login (Rlogin) server/client (IPv4) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	3.0	4.2.1	4.0	4.2
Rlogin server (IPv6) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	4.1	4.2.1	4.1	4.2
Remote Monitoring 1 (RMON1) for Layer 1 and Layer 2 For more information, see the following documents: • *Performance Management of Avaya Virtual Services Platform 4000 Series*, NN46251-701 • *Monitoring Performance on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-701	3.0	4.2.1	4.0	4.2
Remote Monitoring 2 (RMON2) for network and application layer protocols For more information, see the following documents: • *Performance Management of Avaya Virtual Services Platform 4000 Series*, NN46251-701	4.2	4.2.1	4.2	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
• *Monitoring Performance on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-701				
Remote Shell (RSH) server/client For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	3.0	4.2.1	4.0	4.2
Russia summer time zone change For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	4.2	4.2.1	4.2	4.2
Secure Copy (SCP) **Note:** Release 4.2 and 4.2.1 do not support SCP. For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	3.0	N/A	4.0	N/A
Secure hash algorithm 1 (SHA-1) and SHA-2 For more information, see the following documents: • *Configuring OSPF and RIP on Avaya Virtual Services Platform 4000 Series*, NN46251-506 • *Configuring OSPF and RIP on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-506	4.2	4.2.1	4.2	4.2
Secure Shell (SSH) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	3.0	4.2.1	4.0	4.2
Secure Sockets Layer (SSL) certificate management	4.1	4.2.1	4.1	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600				
SSH (IPv6) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	4.1	4.2.1	4.1	4.2
SLA Mon™ For more information, see the following documents: • *Performance Management of Avaya Virtual Services Platform 4000 Series*, NN46251-701 • *Monitoring Performance on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-701	4.1	4.2.1	4.1	4.2
Simple Loop Prevention Protocol (SLPP) For more information, see the following documents: • *Configuring VLANs and Spanning Tree on Avaya Virtual Services Platform 4000 Series*, NN46251-500 • *Configuring VLANs, Spanning Tree, and NLB on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-500	3.0	4.2.1	4.0	4.2
Simple Network Management Protocol (SNMP) v1/2/3 (IPv4) For more information, see the following documents: • *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 • *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601	3.0	4.2.1	4.0	4.2
SNMP (IPv6) For more information, see the following documents: • *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 • *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601	4.1	4.2.1	4.1	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
SoNMP (Avaya topology discovery protocol) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	3.0	4.2.1	4.0	4.2
`spbm-config-mode` boot flag For more information, see the following documents: • *Configuring IP Multicast Routing Protocols on Avaya Virtual Services Platform 4000 Series* , NN46251-504 • *Configuring IP Multicast Routing Protocols on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-504	4.1	4.2.1	4.0.1	4.2
TACACS+ For more information, see the following documents: • *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 • *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601	4.0	4.2.1	4.1	4.2
Telnet server/client (IPv4) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	3.0	4.2.1	4.0	4.2
Telnet server/client (IPv6) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	4.1	4.2.1	4.1	4.2
Trivial File Transfer Protocol (TFTP) server/client (IPv4) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600	3.0	4.2.1	4.0	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
• *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600				
TFTP server/client (IPv6) For more information, see the following documents: • *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 • *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600	4.1	4.2.1	4.1	4.2
Virtual Link Aggregation Control Protocol (VLACP) For more information, see the following documents: • *Configuring Link Aggregation, MLT and SMLT on Avaya Virtual Services Platform 4000 Series*, NN46251-503 • *Configuring Link Aggregation, MLT, SMLT, and vIST on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-503	3.0	4.2.1	4.0	4.2
Layer 2				
Avaya switch cluster (multi-chassis LAG) • Virtual Inter-Switch Trunk (vIST) For more information, see the following documents: • *Configuring Link Aggregation, MLT and SMLT on Avaya Virtual Services Platform 4000 Series*, NN46251-503 • *Configuring Link Aggregation, MLT, SMLT, and vIST on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-503	4.1	4.2.1	4.0	4.2
Media Access Control Security (MACsec) For more information, see the following documents: • *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 • *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601	4.0	4.2.1	4.1	4.2
Microsoft Network Load Balancing Service (NLBS) • Unicast mode For more information, see *Configuring VLANs, Spanning Tree, and NLB on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-500.	N/A	4.2.1	4.0	4.2
MultiLink Trunking (MLT) / Link Aggregation Group (LAG)	3.0	4.2.1	4.0	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
For more information, see the following documents: • *Configuring Link Aggregation, MLT and SMLT on Avaya Virtual Services Platform 4000 Series*, NN46251-503 • *Configuring Link Aggregation, MLT, SMLT, and vIST on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-503				
Spanning Tree Protocol (STP) • Multiple Spanning Tree Protocol (MSTP) • Rapid Spanning Tree Protocol (RSTP) For more information, see the following documents: • *Configuring VLANs and Spanning Tree on Avaya Virtual Services Platform 4000 Series*, NN46251-500 • *Configuring VLANs, Spanning Tree, and NLB on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-500	3.0	4.2.1	4.0	4.2
Avaya Fabric Connect				
All Fabric Connect services with Avaya switch cluster For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	4.1	4.2.1	4.0	4.2
Equal Cost Trees (ECT) For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	3.0	4.2.1	4.0	4.2
E-Tree and Private VLANs • For more information about E-Tree, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510. • For more information about Private VLANs, see the following documents: - *Configuring VLANs and Spanning Tree on Avaya Virtual Services Platform 4000 Series*, NN46251-500 - *Configuring VLANs, Spanning Tree, and NLB on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-500 • For information about how to configure MultiLink Trunks (MLT) and Private VLANs, see the following documents: - *Configuring Link Aggregation, MLT and SMLT on Avaya Virtual Services Platform 4000 Series*, NN46251-503	3.0.1	4.2.1	4.1	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
- *Configuring Link Aggregation, MLT, SMLT, and vIST on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-503				
Inter-VSN routing For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	3.0	4.2.1	4.0	4.2
IPv6 inter-VSN routing For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	4.1	4.2.1	4.1	4.2
IP Multicast over Fabric Connect For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	3.1	4.2.1	4.1	4.2
IP Shortcut routing including ECMP For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	3.0	4.2.1	4.0	4.2
IPv6 Shortcut routing For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	4.1	4.2.1	4.1	4.2
IS-IS accept policies For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	4.1	4.2.1	4.1	4.2
Layer 2 Virtual Service Network (VSN) For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	3.0	4.2.1	4.0	4.2
Layer 3 VSN For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	3.0	4.2.1	4.1	4.2
`run spbm` installation script For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	4.1	4.2.1	4.1	4.2
`run vms endura` script For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	4.1	N/A	N/A	N/A
Transparent UNI (T-UNI) For more information, see *Configuring Avaya Fabric Connect on VSP Operating System Software*, NN47227-510.	3.1	4.2.1	4.2.1	4.2.1

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
Layer 3 IPv4 and IPv6 routing services				
Address Resolution Protocol (ARP) • Proxy ARP • Static ARP For more information, see the following documents: • *Configuration - IP Routing for Avaya Virtual Services Platform 4000 Series*, NN46251-505 • *Configuring IP Routing on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-505	3.0	4.2.1	4.0	4.2
Border Gateway Protocol (BGP) for IPv4 For more information, see the following documents: • *Configuring BGP on Avaya Virtual Services Platform 4000 Series*, NN46251-507 • *Configuring BGP Services on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-508	3.1	4.2.1	4.1	4.2
Internal Border Gateway Protocol (IBGP) For more information, see the following documents: • *Configuring BGP on Avaya Virtual Services Platform 4000 Series*, NN46251-507 • *Configuring BGP Services on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-508	4.2	4.2.1	4.2	4.2
External Border Gateway Protocol (EBGP) For more information, see the following documents: • *Configuring BGP on Avaya Virtual Services Platform 4000 Series*, NN46251-507 • *Configuring BGP Services on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-508	3.1	4.2.1	4.1	4.2
Dynamic Host Configuration Protocol (DHCP) Relay, DHCP Option 82 For more information, see the following documents: • *Configuration - IP Routing for Avaya Virtual Services Platform 4000 Series*, NN46251-505 • *Configuring IP Routing on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-505	3.0	4.2.1	4.0	4.2
Equal Cost Multiple Path (ECMP)	3.0	4.2.1	4.0	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
For more information, see the following documents: • *Configuration - IP Routing for Avaya Virtual Services Platform 4000 Series*, NN46251-505 • *Configuring IP Routing on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-505				
Gratuitous ARP filtering For more information, see the following documents: • *Configuration - IP Routing for Avaya Virtual Services Platform 4000 Series*, NN46251-505 • *Configuring IP Routing on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-505	4.2	4.2.1	4.2	4.2
Internet Control Message Protocol (ICMP) For more information, see the following documents: • *Configuration - IP Routing for Avaya Virtual Services Platform 4000 Series*, NN46251-505 • *Configuring IP Routing on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-505	3.0	4.2.1	4.0	4.2
Internet Group Management Protocol (IGMP) , including virtualization For more information, see the following documents: • *Configuring IP Multicast Routing Protocols on Avaya Virtual Services Platform 4000 Series* , NN46251-504 • *Configuring IP Multicast Routing Protocols on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-504	3.0	4.2.1	4.0.1	4.2
IP route policies For more information, see the following documents: • *Configuration - IP Routing for Avaya Virtual Services Platform 4000 Series*, NN46251-505 • *Configuring IP Routing on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-505	3.0	4.2.1	4.0	4.2
IPsec for IPv6 For more information, see the following documents: • *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601	4.2	4.2.1	4.2	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
• *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601				
IPv6 (OSPFv3, VRRP, RSMLT, DHCP Relay, IPv4 in IPv6 tunnels) For more information, see *Configuring IPv6 Routing on VSP Operating System Software*, NN47227-507.	4.1	4.2.1	4.1	4.2
Layer 3 switch cluster (Routed SMLT) with Virtual Inter-Switch Trunk (vIST) For more information, see the following documents: • *Configuring Link Aggregation, MLT and SMLT on Avaya Virtual Services Platform 4000 Series*, NN46251-503 • *Configuring Link Aggregation, MLT, SMLT, and vIST on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-503	4.1	4.2.1	4.0	4.2
Layer 3 switch cluster (Routed SMLT) with Simplified vIST For more information, see the following documents: • *Configuring Link Aggregation, MLT and SMLT on Avaya Virtual Services Platform 4000 Series*, NN46251-503 • *Configuring Link Aggregation, MLT, SMLT, and vIST on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-503	4.1	4.2.1	4.0.1	4.2
Open Shortest Path First (OSPF) For more information, see the following documents: • *Configuring OSPF and RIP on Avaya Virtual Services Platform 4000 Series*, NN46251-506 • *Configuring OSPF and RIP on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-506	3.1	4.2.1	4.0	4.2
Protocol Independent Multicast–Sparse Mode (PIM-SM), PIM-Source Specific Mode (PIM-SSM) For more information, see the following documents: • *Configuring IP Multicast Routing Protocols on Avaya Virtual Services Platform 4000 Series* , NN46251-504 • *Configuring IP Multicast Routing Protocols on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-504	4.1	4.2.1	4.0.1	4.2
Route Information Protocol (RIP)	3.1	4.2.1	4.0	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
For more information, see the following documents: • *Configuring OSPF and RIP on Avaya Virtual Services Platform 4000 Series*, NN46251-506 • *Configuring OSPF and RIP on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-506				
Static routing For more information, see the following documents: • *Configuration - IP Routing for Avaya Virtual Services Platform 4000 Series*, NN46251-505 • *Configuring IP Routing on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-505	3.0	4.2.1	4.0	4.2
Virtualization with IPv4 Virtual Routing and Forwarding (VRF) • ARP • DHCP Relay • Inter-VRF Routing (static, dynamic, and policy) • Local Routing • OSPFv2 • RIPv1/2 • Route Policies • Static Routing • VRRP For more information, see the following documents: • *Configuration - IP Routing for Avaya Virtual Services Platform 4000 Series*, NN46251-505 • *Configuring IP Routing on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-505	3.0	4.2.1	4.0	4.2
Virtual Router Redundancy Protocol (VRRP) • Avaya Backup Master For more information, see the following documents: • *Configuration - IP Routing for Avaya Virtual Services Platform 4000 Series*, NN46251-505 • *Configuring IP Routing on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-505	3.0	4.2.1	4.0	4.2
Quality of Service and filtering				

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
Access Control List (ACL)-based filtering • Egress ACLs • Ingress ACLs • Layer 2 to Layer 4 filtering • Port • VLAN For more information, see the following documents: • *Configuration - QoS and ACL-Based Traffic Filtering Avaya Virtual Services Platform 4000 Series*, NN46251-502 • *Configuring QoS and ACL-Based Traffic Filtering on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-502	3.0	4.2.1	4.0	4.2
Avaya Auto QoS For more information, see the following documents: • *Configuration - QoS and ACL-Based Traffic Filtering Avaya Virtual Services Platform 4000 Series*, NN46251-502 • *Configuring QoS and ACL-Based Traffic Filtering on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-502	3.0	4.2.1	4.0	4.2
Differentiated Services (DiffServ) including Per-Hop Behavior For more information, see the following documents: • *Configuration - QoS and ACL-Based Traffic Filtering Avaya Virtual Services Platform 4000 Series*, NN46251-502 • *Configuring QoS and ACL-Based Traffic Filtering on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-502	3.0	4.2.1	4.0	4.2
Egress port shaper For more information, see the following documents: • *Configuration - QoS and ACL-Based Traffic Filtering Avaya Virtual Services Platform 4000 Series*, NN46251-502 • *Configuring QoS and ACL-Based Traffic Filtering on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-502	3.0	4.2.1	4.0	4.2
IPv6 ACL filters	4.1	4.2.1	4.1	4.2

Table continues…

Features	Release by platform series			
	VSP 4000	VSP 7200	VSP 8200	VSP 8400
For more information, see the following documents: • *Configuration - QoS and ACL-Based Traffic Filtering Avaya Virtual Services Platform 4000 Series*, NN46251-502 • *Configuring QoS and ACL-Based Traffic Filtering on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-502				
Layer 2 to Layer 4 ingress port rate limiter For more information, see the following documents: • *Configuration - QoS and ACL-Based Traffic Filtering Avaya Virtual Services Platform 4000 Series*, NN46251-502 • *Configuring QoS and ACL-Based Traffic Filtering on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-502	3.0	4.2.1	4.0	4.2

VOSS feature differences

Avaya has implemented feature parity between the VSP Operating System Software (VOSS) platforms in all but a few exceptions. Some features are supported in one platform and not another to maintain compatibility with previous releases. In other cases, the difference is because of the role of the switch in the network.

The following table summarizes the feature differences between the platforms in this release.

Feature	VSP 4000 Series	VSP 7200 Series	VSP 8000 Series
Channelization of 40 Gbps ports	Not applicable	Supported	Supported
CMAC — CFM	Supported	Not supported	Not supported
Endura scripts	Supported	Not supported	Not supported
FDB protected by port	Supported	Not supported	Not supported
NLB unicast	Not supported	Supported	Supported
QoS	Supported	Supported with exceptions: • Classification does not have routed packet classification	Supported with exceptions: • Classification does not have routed packet classification

Table continues…

Feature	VSP 4000 Series	VSP 7200 Series	VSP 8000 Series
		• No ingress policer- Uses ingress port rate limiting instead	• No ingress policer- Uses ingress port rate limiting instead
Software licensing (Premier)	Supports the Avaya Data Licensing Portal and the Product Licensing & Delivery System (PLDS)	Supports Product Licensing & Delivery System (PLDS) only	Supports Product Licensing & Delivery System (PLDS) only

Note:

COM support for VSP 7200 Series and VSP 8400 is planned for COM Release 3.1.2.

Other changes

There are no other changes.

Chapter 3: Important notices

This section describes the supported hardware and software scaling capabilities and provides important information for this release.

Hardware compatibility

This section lists the hardware compatibility for all VOSS platforms.

Hardware compatibility for VSP 4000 Series

This section lists the Avaya Virtual Services Platform 4000 Series hardware and indicates the software release support.

Note:

4.1 is the first VOSS release. Release numbers earlier than 4.1 are releases specific to VSP 4000.

VSP 4000 hardware

Part number	Model number	Initial release	Supported release					
			4.0	4.0.40	4.0.50	4.1	4.2	4.2.1
EC4400004-E6	VSP 4450GSX-DC	4.0.50	—	—	Y	—	—	—
EC4400A03-E6	VSP 4450GTX-HT-PWR+ (no power cord)	4.0.40	—	Y	—	Y	Y	Y
EC4400E03-E6	VSP 4450GTX-HT-PWR+ (NA power cord)	4.0.40	—	Y	—	Y	Y	Y
EC4400x05-E6 Note: Replace the “x” with a country specific power cord code. See the footnote for details.	VSP 4450GSX-PWR+	4.0	Y	—	—	Y	Y	Y

Table continues…

Part number	Model number	Initial release	Supported release					
			4.0	4.0.40	4.0.50	4.1	4.2	4.2.1
EC4400A05-E6GS	VSP 4450GSX-PWR+ TAA Compliant (no power cord)	4.0.50	—	—	Y	—	—	Y
EC4400E05-E6GS	VSP 4450GSX-PWR+ TAA Compliant (NA power cord)	4.0.50	—	—	Y	—	—	Y
EC4800078-E6	VSP 4850GTS DC	3.0	Y	—	—	Y	Y	Y
EC4800x78-E6 EC4800x78-E6GS Note: Replace the “x” with a country specific power cord code. See the footnote for details.	VSP 4850GTS	3.0	Y	—	—	Y	Y	Y
EC4800x88-E6 EC4800x88-E6GS Note: Replace the “x” with a country specific power cord code. See the footnote for details.	VSP 4850GTS-PWR+	3.0	Y	—	—	Y	Y	Y

Note: The character (x) in the order number indicates the power cord code. Replace the “x” with the proper letter to indicate the desired product nationalization. See the following for details:

“A”: No power cord included.

“B”: Includes European “Schuko” power cord common in Austria, Belgium, Finland, France, Germany, The Netherlands, Norway, and Sweden.

“C”: Includes power cord commonly used in the United Kingdom and Ireland.

“D”: Includes power cord commonly used in Japan.

“E”: Includes North American power cord.

“F”: Includes Australian power cord.

VSP 4000 power supplies

The VSP 4000 supports both AC and DC power supplies. One power supply is installed in the system.

You can install a redundant power supply to support additional power requirements or to provide power redundancy.

The following table describes the VSP 4000–compatible AC and DC power supplies and their part numbers (order codes). All the power supplies are EUED RoHS 5/6 compliant.

Note:

The 300–watt and 1000–watt AC power supplies use the IEC 60320 C16 AC power cord connector.

Use the order codes to order a replacement for the primary PSU or to order a redundant PSU for your VSP 4000 system.

Table 1: Power supply order codes

VSP 4000 PSU	Usage	Part number (order code)
300W AC power supply	For use in the ERS 4626GTS, 4850GTS, VSP 4850GTS and WL8180, WL8180-16L wireless controllers.	AL1905?08-E5*
Stackable 1000W AC POE+ power supply	For use in 4X00 PWR+.	AL1905?21–E6*
1000W AC PoE+ power supply	For use with VSP 4450GTX-HT-PWR+	EC4005?03–E6
300W DC power supply	For use in the VSP 4850GTS-DC, ERS5698TFD, 5650TD, and 5632FD. DC connector included.	AL1905005-E5

*__Note:__The seventh character (?) of the switch order number must be replaced with the proper letter to indicate desired product nationalization. See the following for details:

“A”: No power cord included.

“B”: Includes European “Schuko” power cord common in Austria, Belgium, Finland, France, Germany, The Netherlands, Norway, and Sweden.

“C”: Includes power cord commonly used in the United Kingdom and Ireland.

“D”: Includes power cord commonly used in Japan.

“E”: Includes North American power cord.

“F”: Includes Australian power cord.

Important operational note for VSP 4000 switches

This section provides information to take into consideration to prevent system operation failure.

Operational consideration for USB Flash Drive on factory supplied and converted VSP 4000 switches
Warning: The USB FLASH drive on all models of VSP 4850 (factory built and converted from ERS 4850) must be treated as a permanent non-removable part of the switch and must NEVER be removed from the switch to ensure proper operation. Additionally, the USB cover must be installed to ensure additional protection against removal. The USB FLASH drive on the VSP 4850 switch is uniquely and permanently bound to the operating system of the switch it is first used on and cannot be transferred to a different switch. Removal (and reinsertion) of the USB FLASH drive from the switch is not supported as it can permanently compromise the switch functionality and render it non-functional.

Hardware compatibility for VSP 7200 Series

This section lists the VSP 7200 Series hardware and indicates the software release support.

VSP 7200 hardware

Part number	Model number	Initial release
EC720001F-E6	VSP 7254XSQ DC (Front to back airflow)	4.2.1
EC7200x1B-E5 EC7200x1F-E6 B represents back to front airflow. F represents front to back airflow. Note: Replace the “x” with a country specific power cord code. See the footnote for details.	VSP 7254XSQ	4.2.1
EC720002F-E6	VSP 7254XTQ DC (Front to back airflow)	4.2.1
EC7200x2B-E5 EC7200x2F-E6 B represents back to front airflow. F represents front to back airflow. Note: Replace the “x” with a country specific power cord code. See the footnote for details.	VSP 7254XTQ	4.2.1
***Note**: The character (x) in the order number indicates the power cord code. Replace the “x” with the proper letter to indicate desired product nationalization. See the following for details: “A”: No power cord included.		

Table continues…

Part number	Model number	Initial release
“B”: Includes European “Schuko” power cord common in Austria, Belgium, Finland, France, Germany, The Netherlands, Norway, and Sweden. “C”: Includes power cord commonly used in the United Kingdom and Ireland. “D”: Includes power cord commonly used in Japan. “E”: Includes North American power cord. “F”: Includes Australian power cord.		

Compatible transceivers

Important:

Avaya recommends using Avaya-branded SFP, SFP+, and QSFP+ transceivers as they have been through extensive qualification and testing. Avaya will not be responsible for issues related to non-Avaya branded transceivers.

- The VSP 7200 Series operates in forgiving mode for SFP transceivers, which means that the switch will bring up the port operationally when using non-Avaya SFP transceivers. Avaya does not provide support for operational issues related to these SFPs, but they will operate and the port link will come up. The switch logs the device as an unsupported or unknown device.
- The VSP 7200 Series operates in strict mode for SFP+ and QSFP+ transceivers, which means that the switch will not bring the port up operationally when using non-Avaya SFP+ or QSFP+ transceivers.
- The VSP 7200 Series operates in forgiving mode for SFP+ and QSFP+ direct attached cables, which means that the switch will bring up the port operationally when using Non-Avaya direct attached cables. Avaya does not provide support for operational issues related to these DACs, but they will operate and the port link will come up.

For more information about compatible transceivers, see *Installing Transceivers and Optical Components on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-301.

VSP 7200 operational notes

- The VSP 7254XSQ has a PHYless design, which is typical for Data Center Top of Rack switches. The benefits of a PHYless design are lower power consumption and lower latency. However, due to the PHYless design, the following transceivers are not supported:
  - AA1403017-E6: 1-port 10GBASE-LRM SFP+
  - AA1403016-E6: 1-port 10GBase-ZR/ZW SFP+

    The AA1403165 10GBASE-ZR CWDM DDI SFP+ transceiver can be substituted for AA1403016-E6 10GBASE-ZR/ZW SFP+.
- Software partitions the switch into 2 logical slots: Slot 1 and Slot 2.
  - Slot 1: 10 Gbps Ports: 1 - 48
  - Slot 2: 40 Gbps Ports: 1 - 6
- Channelization is supported on the 40 Gbps QSFP+ ports.
- Macsec support:
  - MACsec is only supported on the VSP 7254XTQ 10 Gbps ports

  - MACsec is not supported on VSP 7254XSQ 10 Gbps ports.
  - MACsec is not supported on VSP 7254XTQ and VSP 7254XSQ 40 Gbps ports whether channelization is enabled or not.
- 1000BASE-T SFP (AA1419043-E6) will only operate at 1 Gbps speeds when used on a VSP 7254XSQ.
- When you use 1 Gigabit Ethernet SFP transceivers on VSP 7254XSQ, the software disables auto-negotiation on the port:
  - If you use 1 Gbps fiber SFP transceivers, the remote end must also have auto-negotiation disabled.
  - If you use 1 Gbps copper SFP transceivers, the remote end must have auto-negotiation enabled. If not, the link will not be established.
- When a port on VSP 7254XSQ is disabled/enabled or a cable replaced or the switch rebooted, the remote link may flap twice.
- Avaya recommends enabling auto-negotiation to ensure proper operation at 100M speeds on VSP 7254XTQ:
  - Link instability will be seen if both ends are set to 100M auto-negotiation disabled and a straight through cable is used.
  - If Link instability is seen when using a cross-over cable, a port disable or enable can fix the issue.

For more information, see *Installing Transceivers and Optical Components on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-301

Hardware compatibility for VSP 8000 Series

This section lists the VSP 8000 Series hardware and indicates the software release support.

Note:

4.1 is the first VOSS release. Release numbers earlier than 4.1 are releases specific to VSP 8000.

VSP 8000 hardware

Part number	Model number	Initial release	Supported release					
			4.0	4.0.1	4.0.50	4.1	4.2	4.2.1
EC8200x01-E6 EC8200x01-E6GS Note: Replace the “x” with a country specific power cord code. See the footnote for details.	VSP 8284XSQ	4.0	Y	Y	Y	Y	Y	Y

Table continues…

Part number	Model number	Initial release	Supported release					
			4.0	4.0.1	4.0.50	4.1	4.2	4.2.1
EC8200001-E6	VSP 8284XSQ-DC	4.0.50	—	—	Y	—	—	Y
EC8400001-E6	VSP 8404-DC	4.2.1	—	—	—	—	—	Y
EC8400x01-E6 EC8200x01-E6GS Note: Replace the “x” with a country specific power cord code. See the footnote for details.	VSP 8404	4.2	—	—	—	—	Y	Y
Ethernet Switch Modules (ESM) — VSP 8400 only								
EC8404001-E6 EC8404001-E6GS	8424XS	4.2	—	—	—	—	Y	Y
EC8404002-E6 EC8404002-E6GS	8424XT	4.2	—	—	—	—	Y	Y
EC8404003-E6 EC8404003-E6GS	8408QQ	4.2	—	—	—	—	Y	Y
EC8404005-E6 EC8404005-E6GS	8418XSQ	4.2	—	—	—	—	Y	Y

*__Note__: The character (x) in the order number indicates the power cord code. Replace the “x” with the proper letter to indicate desired product nationalization. See the following for details:

“A”: No power cord included.

“B”: Includes European “Schuko” power cord common in Austria, Belgium, Finland, France, Germany, The Netherlands, Norway, and Sweden.

“C”: Includes power cord commonly used in the United Kingdom and Ireland.

“D”: Includes power cord commonly used in Japan.

“E”: Includes North American power cord.

“F”: Includes Australian power cord.

Compatible transceivers

Important:

Avaya recommends using Avaya-branded SFP, SFP+, and QSFP+ transceivers as they have been through extensive qualification and testing. Avaya will not be responsible for issues related to non-Avaya branded transceivers.

- The VSP 8000 Series operates in forgiving mode for SFP transceivers, which means that the switch will bring up the port operationally when using non-Avaya SFP transceivers. Avaya does not provide support for operational issues related to these SFPs, but they will

operate and the port link will come up. The switch logs the device as an unsupported or unknown device.

- The VSP 8000 Series operates in strict mode for SFP+ and QSFP+ transceivers, which means that the switch will not bring the port up operationally when using non-Avaya SFP+ or QSFP+ transceivers.
- The VSP 8000 Series operates in forgiving mode for SFP+ and QSFP+ direct attached cables, which means that the switch will bring up the port operationally when using Non-Avaya direct attached cables. Avaya does not provide support for operational issues related to these DACs, but they will operate and the port link will come up.

For more information about compatible transceivers, see *Installing Transceivers and Optical Components on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-301.

Converting ERS 4850 to VSP 4000

This section lists information on Avaya switch conversion supported in this release.

Important:

Switch conversion is applicable only to the Avaya Virtual Services Platform 4000 Series. Currently, only the conversion of an Avaya ERS 4850 switch to a VSP 4000 switch is supported.

ERS 4850 and VSP 4000 quick conversion

You can convert an Avaya ERS 4850 switch to a VSP 4000 switch, if there is a network requirement. Avaya provides a conversion kit to convert a single installation (not stacked) of an Avaya ERS 4850 switch to a VSP 4000 switch.

The ERS 4850 to VSP 4000 conversion kit (part number EC4810003.3.0) contains:

- VSP 4000 USB FLASH drive with software module (Release 3.0)
- VSP 4000 USB cover
- Stacking port cover and screws
- 60–day trial license for the VSP 4000

USB considerations for factory supplied and converted VSP 4000 switches
Warning: The USB FLASH drive on all models of VSP 4850 (factory built and converted from ERS4850) must be treated as a permanent non-removable part of the switch and must NEVER be removed from the switch to ensure proper operation. Additionally, the USB cover must be installed to ensure additional protection against removal. The USB FLASH drive on the VSP 4850 switch is uniquely and permanently bound to the operating system of the switch it is first used on and cannot be transferred to

USB considerations for factory supplied and converted VSP 4000 switches
a different switch. Removal (and reinsertion) of the USB FLASH drive from the switch is not supported as it can permanently compromise the switch functionality and render it non-functional.

On a converted VSP 4000 switch, you can also perform a conversion back to the ERS 4850, using the ACLI.

For the conversion to be successful, you must ensure that the hardware and software criteria on the system being converted, are satisfied. For more information, see *ERS 4850 to VSP 4000 Quick Conversion*, NN46251-400.

Software scaling capabilities

This section lists software scaling capabilities of the following products:

- Avaya Virtual Services Platform 4000 Series
- Avaya Virtual Services Platform 7200 Series
- Avaya Virtual Services Platform 8000 Series

Table 2: Software scaling capabilities

	Maximum number supported		
	VSP 4000 Series	**VSP 7200 Series**	**VSP 8000 Series**
Layer 2			
MAC table size (without SPBM)	32,000	224,000	224,000
MAC table size (with SPBM)	16,000	112,000	112,000
Port based VLANs	4,059	4,059	4,059
Private VLANs (E-Tree)	1,000	4,059	4,059
Protocol based VLANs (IPv6 only)	1	1	1
RSTP instances	1	1	1
MSTP instances	12	12	12
LACP aggregators	24	54 (up to 72 with channelization)	84 (up to 96 with channelization)
Ports per LACP aggregator	16 (8-active, 8-standby)	16 (8-active, 8-standby)	16 (8-active, 8-standby)
MLT groups	24	54 (up to 72 with channelization)	84 (up to 96 with channelization)

Table continues…

	Maximum number supported		
	VSP 4000 Series	**VSP 7200 Series**	**VSP 8000 Series**
Ports per MLT group	8	8	8
SLPP VLANs	128	128	128
VLACP interfaces	50	54 (up to 72 with channelization)	84 (up to 96 with channelization)
Layer 3 (IPv4 & IPv6 Common)			
IP interfaces (IPv4 or IPv6)	256	506 *See note in the row below	506 *See note in the row below
VRRP interfaces (IPv4/ IPv6)	64	252 *See note in the row below	252 *See note in the row below
Routed Split Multi-Link Trunking (RSMLT) interfaces (IPv4 or IPv6)	252	252 *See note in the row below	252 *See note in the row below
VSP 7200 Series and VSP 8000 Series: **Note:** * The number of IP interfaces plus the number of VRRP interfaces plus the number of RSMLT interfaces plus 2 (if IP shortcuts is enabled) should not exceed 508.			
VRRP interfaces with fast timers (200ms) - IPv4/ IPv6	24	24	24
ECMP groups/paths per group	500/4	1,000/8	1,000/8
OSPF v2/v3 interfaces	48 (24 of these can be passive)	500	500
OSPF v2/v3 neighbors (adjacencies)	24	500	500
OSPF areas	12 for each VRF 64 for the switch	12 for each VRF 80 for the switch	12 for each VRF 80 for the switch
DHCP Relay forwarding (IPv4 or IPv6)	128	1,024	1,024
Layer 3 (IPv4)			
IPv4 ARP table	6,000	32,000	32,000
IPv4 static ARP entries	200 for each VRF 1,000 for the switch	2,000 for each VRF 10,000 for the switch	2,000 for each VRF 10,000 for the switch
IPv4 CLIP interfaces	64	64	64

Table continues…

	Maximum number supported		
	VSP 4000 Series	**VSP 7200 Series**	**VSP 8000 Series**
IPv4 route table size	16,000	N/A	N/A
IPv4 route table size with "ipv6-mode" boot flag set to false	N/A	16,000	16,000
IPv4 route table size with "ipv6-mode" boot flag set to true	N/A	8,000	8,000
IPv4 static routes	1,000 for each VRF 1,000 for the switch	1,000 for each VRF 5,000 for the switch	1,000 for each VRF 5,000 for the switch
RIP interfaces	24	200	200
IPv4 RIP routes	2,000 for each VRF 2,000 for the switch	2,000 for each VRF 2,000 for the switch	2,000 for each VRF 2,000 for the switch
IPv4 OSPF routes	16,000 for each VRF 16,000 for the switch	16,000 for each VRF 16,000 for the switch	16,000 for each VRF 16,000 for the switch **Note:** The maximum routes supported per VRF is 16,000. The 16,000 routes can be distributed across the 24 VRFs (+ GRT) in any manner.
BGP peers	12	12	12
IPv4 BGP routes	16,000 for the switch	16,000 for the switch	16,000 for the switch
IPv4 shortcut routes	16,000	16,000	16,000
IPv4 route policies	500 for each VRF 5,000 for the switch	500 for each VRF 5,000 for the switch	500 for each VRF 5,000 for the switch
IPv4 NLB interfaces	N/A	256	256
IPv4 VRF instances	24	24	24
IPv4 UDP forwarding	128	512	512
Layer 3 (IPv6)			
IPv6 Neighbor table	4,000	8,000	8,000
IPv6 static neighbor records	128	256	256
IPv6 CLIP interfaces	1	1	1

Table continues…

	Maximum number supported		
	VSP 4000 Series	**VSP 7200 Series**	**VSP 8000 Series**
IPv6 route table size (prefix length < 64 bits)	8,000	N/A	N/A
IPv6 route table size (prefix length > 64 bits)	256	N/A	N/A
IPv6 route table size (Prefix Length < 64 bits) with "ipv6-mode" boot flag set to false	N/A	8,000	8,000
IPv6 route table size (Prefix Length > 64 bits) with "ipv6-mode" boot flag set to false	N/A	0	0
IPv6 route table size (Prefix Length < 64 bits) with "ipv6-mode" boot flag set to true	N/A	4,000	4,000
IPv6 route table size (Prefix Length > 64 bits) with "ipv6-mode" boot flag set to true	N/A	2,000	2,000
IPv6 static routes	1,000	1,000	1,000
IPv6 OSPFv3 routes - GRT only	8,000	8,000	8,000
IPv6 shortcut routes – GRT only	8,000	8,000	8,000
IPv6 6in4 configured tunnels	254	506	506
IP Multicast			
IGMP interfaces	4,059	4,059	4,059
PIM interfaces	128 (Active), 256 (Passive)	128 (Active) 500 (Passive)	128 (Active), 256 (Passive)
PIM Neighbors (GRT Only)	128	128	128
PIM-SSM static channels	512	4,000	4,000
Multicast receivers or IGMP joins (per switch)	1,000	6,000	6,000
Multicast senders (per switch)	1,000	6,000	6,000
Total multicast routes (per switch)	4,000	6,000	6,000

Table continues…

	Maximum number supported		
	VSP 4000 Series	**VSP 7200 Series**	**VSP 8000 Series**
Static multicast routes	512	4,000	4,000
Multicast enabled Layer 2 VSN	1,000	2,000	2,000
Multicast enabled Layer 3 VSN	24	24	24
Fabric Connect			
SPB regions	1	1	1
B-VIDs	2	2	2
IS-IS interfaces & adjacencies (BCB only)	50	54 (up to 72 with channelization)	84 (up to 96 with channelization)
I-SIDs supported	The number of I-SIDs supported depends on the number of IS-IS interfaces and adjacencies (NNIs) configured. This mapping is illustrated in Number of I-SIDs supported on page 46.		
Layer 2 MAC table size (with SPBM)	16,000	112,000	112,000
SPBM enabled switches per region (BEB + BCB)	2,000	2,000	2,000
Number of BEBs a node can share services with (Layer 2 VSNs, Layer 3 VSNs, E-Tree, Multicast, Transparent UNI). vIST clusters are counted as 3 nodes.	2,000	500	500
Number of vIST/IST clusters a BEB can share I-SIDs with	2,000	330	330
Layer 2 VSNs per switch (VLANs mapped to I-SID)	1,000	4,059	4,059
Transparent UNI services per switch (Port mapped to I-SID)	48	54 (up to 72 with channelization)	84 (up to 96 with channelization)
E-Tree (Private VLANs) per switch	1,000	4,059	4,059
Layer 3 VSNs per switch (VRFs mapped to I-SID)	24	24	24
Layer 2/Layer 3 Multicast UNI I-SIDs (S,G) per switch	4,000	6,000	6,000
Filters and QoS			

Table continues…

	Maximum number supported		
	VSP 4000 Series	**VSP 7200 Series**	**VSP 8000 Series**
Total IPv4 Ingress rules/ ACEs (Port/VLAN based, Security/QoS filters)	1,530	766	766
Total IPv4 Egress rules/ ACEs (Port based, Security filters)	254	252	252
Total IPv6 Ingress rules/ ACEs (Port/VLAN based, Security/QoS filters)	256	256	256
Diagnostics			
Mirrored ports	49	53 (up to 71 with channelization)	83 (up to 95 with channelization)
OAM			
FTP sessions (IPv4/IPv6)	4	4	4
Rlogin sessions (IPv4/ IPv6)	8	8	8
SSH sessions (IPv4/IPv6)	8 total (any combination of IPv4 and IPv6 up to 8)	8 total (any combination of IPv4 and IPv6 up to 8)	8 total (any combination of IPv4 and IPv6 up to 8)
Telnet sessions (IPv4/ IPv6)	8	8	8

The following table shows the number of I-SIDs supported per BEB. I-SIDs are used for Layer 2 VSN, Layer 3 VSN, Transparent-UNI, E-Tree, and Multicast.

Table 3: Number of I-SIDs supported for the number of configured IS-IS interfaces and adjacencies (NNIs)

Number of IS-IS interfaces (NNIs)	VSP 4000 Series		VSP 7200 Series		VSP 8000 Series	
	vIST used	vIST not used	vIST used	vIST not used	vIST used	vIST not used
4	1,000	1,000	4,000	4,000	4,000	4,000
6	1,000	1,000	3,500	4,000	4,000	4,000
10	650	1,000	2,900	4,000	4,000	4,000
20	350	700	2,000	4,000	2,450	4,000
48	150	300	1,000	2,000	1,100	2,200
72	N/A	N/A	750	1,500	800	1,600
100	N/A	N/A	N/A	N/A	600	1,200
128	N/A	N/A	N/A	N/A	475	950

File names for VOSS 4.2.1

This section lists the software files for the following VOSS platforms:

- VSP 4000 Series
- VSP 7200 Series
- VSP 8000 Series

Caution:

To download the software and files, use one of the following browsers: IE 9 or greater, or Mozilla Firefox. Do not use Google Chrome to download software and files.

Important:

After you download the software, calculate and verify the md5 checksum. To calculate and verify the md5 checksum on the device, see Calculating and verifying the md5 checksum for a file on a switch on page 48.To calculate and verify the md5 checksum on a Unix or Linux machine, see Calculating and verifying the md5 checksum for a file on a client workstation on page 49. On a Windows machine, use the appropriate Windows utility that is supported on your Windows version.

Note:

Starting in VOSS 4.2, the encryption modules are included as part of the standard runtime software image file.

Note:

Prior to VOSS 4.2.1, image filenames began with VSP, for example, VSP4K4.1.0.0.tgz. In VOSS 4.2.1 and later, image filenames start with VOSS, for example, VOSS8K4.2.1.0.tgz.

The following table lists the files for this release.

Table 4: File names and sizes

Product	File name (File size in bytes)		
	Standard runtime software image	EDM Help	MIB files
VSP 4000 Series	VOSS4K.4.2.1.0.tgz (110,876,200)	VSP4000v421_HELP_EDM_gzip.zip (2,870,067)	• VOSS4K.4.2.1.0_mib.zip • VOSS4K.4.2.1.0_mib.txt
VSP 7200 Series	VOSS7k.4.2.1.0.tgz (60,681,575)	VOSSv421_HELP_EDM_gzip.zip (2,956,707)	• VOSS7K.4.2.1.0_mib.zip • VOSS7K.4.2.1.0_mib.txt
VSP 8000 Series	VOSS8k.4.2.1.0.tgz (60,680,776)	VOSSv421_HELP_EDM_gzip.zip (2,956,707)	• VOSS8K.4.2.1.0_mib.zip • VOSS8K.4.2.1.0_mib.txt

Open Source software files

The following table lists the details of the Open Source software files distributed with the switch software.

Table 5: Open Source software files

Product	Master copyright file	Open source base software for 4.2.1
VSP 4000 Series	VOSS4K.4.2.1.0_oss-notice.html	VOSS4K.4.2.1.0_OpenSource.zip
VSP 7200 Series	VOSS7K.4.2.1.0_oss-notice.html	VOSS7K.4.2.1.0_OpenSource.zip
VSP 8000 Series	VOSS8K.4.2.1.0_oss-notice.html	VOSS8K.4.2.1.0_OpenSource.zip

Calculating and verifying the md5 checksum for a file on a switch

Perform this procedure on a VSP switch to verify that the software files downloaded properly to the switch. Avaya provides the md5 checksum for each release on the Avaya Support website.

Before you begin

- Download the md5 checksum to an intermediate workstation or server where you can open and view the contents.
- Download the .tgz image file to the switch.

About this task

Calculate and verify the md5 checksum after you download software files.

Procedure

1. Log on to the switch to enter User EXEC mode.
2. Use the **ls** command to view a list of files with the `.tgz` extension:

   ```
   ls *.tgz
   ```

3. Calculate the md5 checksum for the file:

   ```
   md5 <filename.tgz>
   ```

4. Compare the number generated for the file on the switch with the number that appears in the md5 checksum on the workstation or server. Ensure that the md5 checksum of the software suite matches the system output generated from calculating the md5 checksum from the downloaded file.

Example

The following example provides output for VSP 8200 but the same process can be used on other VSP switches.

View the contents of the md5 checksum on the workstation or server:

```
3242309ad6660ef09be1b945be15676d  VSP8200.4.0.0.0_edoc.tar
d000965876dee2387f1ca59cf081b9d6  VSP8200.4.0.0.0_mib.txt
897303242c30fd944d435a4517f1b3f5  VSP8200.4.0.0.0_mib.zip
2fbd5eab1c450d1f5feae865b9e02baf  VSP8200.4.0.0.0_modules.tgz
a9d6d18a979b233076d2d3de0e152fc5  VSP8200.4.0.0.0_OpenSource.zip
```

```
8ce39996a131de0b836db629b5362a8a  VSP8200.4.0.0.0_oss-notice.html
80bfe69d89c831543623aaad861f12aa  VSP8200.4.0.0.0.tgz
a63a1d911450ef2f034d3d55e576eca0  VSP8200v4.0.0.0.zip
62b457d69cedd44c21c395505dcf4a80  VSP8200v400_HELP_EDM_gzip.zip
```

Calculate the md5 checksum for the file on the switch:

```
Switch:1>ls *.tgz
-rw-r--r--  1 0       0         44015148 Dec  8 08:18  VSP8200.4.0.0.0.tgz
-rw-r--r--  1 0       0         44208471 Dec  8 08:19  VSP8200.4.0.1.0.tgz
Switch:1>md5 VSP8200.4.0.0.0.tgz
MD5 (VSP8200.4.0.0.0.tgz) = 80bfe69d89c831543623aaad861f12aa
```

Calculating and verifying the md5 checksum for a file on a client workstation

Perform this procedure on a Unix or Linux machine to verify that the software files downloaded properly. Avaya provides the md5 checksum for each release on the Avaya Support website.

About this task

Calculate and verify the md5 checksum after you download software files.

Procedure

1. Calculate the md5 checksum of the downloaded file:

   ```
   $ /usr/bin/md5sum <downloaded software-filename>
   ```

   Typically, downloaded software files are in the form of compressed Unix file archives (.tgz files).

2. Verify the md5 checksum of the software suite:

   ```
   $ more <md5-checksum output file>
   ```

3. Compare the output that appears on the screen. Ensure that the md5 checksum of the software suite matches the system output generated from calculating the md5 checksum from the downloaded file.

Example

The following example uses files from Avaya Virtual Services Platform 4000 Series but the same process applies to software files for all VSP switches.

Calculate the md5 checksum of the downloaded file:

```
$ /usr/bin/md5sum VSP4K.4.0.40.0.tgz

02c7ee0570a414becf8ebb928b398f51 VSP4K.4.0.40.0.tgz
```

View the md5 checksum of the software suite:

```
$ more VSP4K.4.0.40.0.md5
285620fdc1ce5ccd8e5d3460790c9fe1 VSP4000v4.0.40.0.zip

a04e7c7cef660bb412598574516c548f VSP4000v4040_HELP_EDM_gzip.zip
```

```
ac3d9cef0ac2e334cf94799ff0bdd13b VSP4K.4.0.40.0_edoc.tar
29fa2aa4b985b39843d980bb9d242110 VSP4K.4.0.40.0_mib_sup.txt
c5f84beaf2927d937fcbe9dd4d4c7795 VSP4K.4.0.40.0_mib.txt
ce460168411f21abf7ccd8722866574c VSP4K.4.0.40.0_mib.zip
1ed7d4cda8b6f0aaf2cc6d3588395e88 VSP4K.4.0.40.0_modules.tgz
1464f23c99298b80734f8e7fa32e65aa VSP4K.4.0.40.0_OpenSource.zip
945f84cb213f84a33920bf31c091c09f VSP4K.4.0.40.0_oss-notice.html
02c7ee0570a414becf8ebb928b398f51 VSP4K.4.0.40.0.tgz
```

Shutting down the system

Use the following procedure to shut down the system.

⚠ Caution:

Before you unplug the AC power cord, always perform the following shutdown procedure. This procedure flushes any pending data to ensure data integrity.

Procedure

1. Enter Privileged EXEC mode:

   ```
   enable
   ```

2. Shut down the system:

   ```
   sys shutdown
   ```

3. Before you unplug the power cord, wait until you see the following message:

   ```
   System Halted, OK to turn off power
   ```

Example

Shut down a running system.

```
Switch:1#sys shutdown
Are you sure you want shutdown the system? Y/N  (y/n) ? y
CP1  [05/08/14 15:47:50.164] 0x00010813 00000000 GlobalRouter HW INFO System shutdown
initiated from CLI
CP1  [05/08/14 15:47:52.000] LifeCycle: INFO: Stopping all processes
CP1  [05/08/14 15:47:53.000] LifeCycle: INFO: All processes have stopped
CP1  [05/08/14 15:47:53.000] LifeCycle: INFO: All applications shutdown, starting power
down sequence
INIT: Sending processes the TERM signal
Stopping OpenBSD Secure Shell server: sshdno /usr/sbin/sshd found; none killed
Stopping vsp...Error, do this: mount -t proc none /proc
done
sed: /proc/mounts: No such file or directory
sed: /proc/mounts: No such file or directory
sed: /proc/mounts: No such file or directory
Deconfiguring network interfaces... done.
Stopping syslogd/klogd: no syslogd found; none killed
Sending all processes the TERM signal...
Sending all processes the KILL signal...
/etc/rc0.d/S25save-rtc.sh: line 5: /etc/timestamp: Read-only file system
Unmounting remote filesystems...
Stopping portmap daemon: portmap.
Deactivating swap...
```

```
Unmounting local filesystems...
[24481.722669] Power down.
[24481.751868] System Halted, OK to turn off power
```

Important information and restrictions

This section contains important information and restrictions you must consider before you use the switch.

Supported browsers

The switch supports the following browsers to access Enterprise Device Manager (EDM):

- Microsoft Internet Explorer 8.0
- Mozilla Firefox 32

User configurable SSL certificates

If you generate a certificate on the switch, you can configure only the expiration time.

If you need to configure other user parameters, you can generate a certificate off the switch and upload the key and certificate files to the `/intflash/ssh` directory. Rename the uploaded files to host.cert and host.key, and then reboot the system. The system loads the user-generated certificates during startup. If the system cannot find host.cert and host.key during startup, it generates a default certificate.

For more information about SSH and SSL certificates, see the following documents:

- For the VSP 7200 Series and VSP 8000 Series, see *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600.
- For the VSP 4000 Series, see *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600.

Security modes

The VOSS platforms support three security modes:

- Enhanced secure
- Hsecure
- SSH secure

Enable SSH secure mode to allow only SSH to be used and disable all other protocols which include Telnet, rlogin, FTP, SNMP, TFTP, HTTP, and HTTPS. Enabling this mode disables Telnet,

rlogin, FTP, SNMP, TFTP, HTTP, and HTTPS by setting the boot flags for these protocols to off. You can over-ride the configuration and enable required protocols individually for run-time use. The administrator will have to enable required protocols individually for run-time use again following a reboot even if you save the configuration. This is because the SSH secure mode enable takes precedence at the time of reboot and the other protocols will be disabled even though the configuration file has them set to enabled.

Note:

Disabling SSH secure mode will not automatically enable the OA&M protocols that were disabled. The boot flags for the required protocols will have to be individually set to enabled.

The following table lists the differences between enhanced secure mode and hsecure mode.

Table 6: Enhanced secure mode versus hsecure mode

Feature	Enhanced secure	Hsecure
Authentication	Role-based: • admin • privilege • operator • security • auditor	Access-level based: • rwa • rw • ro • l3 • l2 • l1
Password length	Minimum of 8 characters with the exception of the Admin, which requires a minimum of 15 characters	10 characters, minimum
Password rules	1 or 2 upper case, lower case, numeric and special characters	Minimum of 2 upper case, 2 lower case, 2 numeric and 2 special characters
Password expiration	Per-user minimum change interval is enforced, which is programmed by the Administrator	Global expiration, configured by the Admin
Password-unique	Previous passwords and common passwords between users are prevented	The same
Password renewal	Automatic password renewal is enforced	The same
Audit logs	Audit logs are encrypted, and authorized users are able to view, modify, and delete.	Standard operation

Table continues…

Feature	Enhanced secure	Hsecure
SNMPv3	Password rules apply to SNMPv3 Auth&Priv. SNMPv3 is required (V1/V2 disabled)	SNMPv1 and SNMPv2 can be enabled.
EDM	Site Admin to enable or disable	Disabled
Telnet and FTP	Site Admin to enable or disable	The same
DOS attack Prevention	Not available	Prevents DOS attacks by filtering IP addresses and IP address ranges.

Feature licensing

After you start a new system, the 60–day Premium Trial license countdown begins. You will see notification messages as the countdown approaches the end of the trial period. After 60 days, the Premium Trial license expires. You will see messages on the console and in the alarms database that the license has expired. The next time you restart the system after the license expiration, the system no longer supports Premier services.

If you use a Base License, you do not need to install a license file. If you purchase a Premier License, you must obtain and install a license file. For more information about how to generate a license file, see *Getting Started with Avaya PLDS for Avaya Networking Products*, NN46199-300. For more information about how to install a license file, see the following documents:

- For information on the VSP 4000 Series, see *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600 .
- For information on the VSP 7200 Series and VSP 8000 Series, see *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600.

Important:

The license filename stored on a device must meet the following requirements:

- Maximum of 63 alphanumeric characters
- No spaces or special characters allowed
- Underscore (_) is allowed
- The file extension ".xml" is required

SFP+ ports

SFP+ ports support 1 Gbps and 10 Gbps transceivers only.

For a complete list of supported SFPs and QSFPs, see Hardware compatibility on page 33 .

LACP with Simplified vIST/SPB NNI links

LACP is not recommended on SPB NNI MLT links or on the Simplified Virtual IST.

vIST VLAN IP addresses

Do not configure a Rendezvous Point (RP) or Bootstrap Router (BSR) on the vIST VLAN because you cannot ping them outside of the vIST VLAN subnet. When you enter the **`ip pim enable`** command on the vIST VLAN, the following message displays:

```
WARNING: Please do not use virtual IST VLAN IP address for BSR and RP
related configurations, as unicast packets to virtual IST vlan IP address
from outside of  virtual IST vlan subnet will be dropped. Use Loopback or
CLIP interface IP address for BSR and RP related configurations.
```

show vlan remote-mac-table command output

The output for the **`show vlan remote-mac-table`** command can be different than what appears for the same command on VSP 9000.

Because all MinM packets that originate from the IST switch use the virtual B-MAC as the source B-MAC, the remote BEB learns the C-MAC against the virtual B-MAC. Because the remote BEB uses the shortest path to the virtual B-MAC, the remote BEB can show the IST peer as a tunnel in the **`show vlan remote-mac-table`** command output.

Interoperability notes for VSP 4000 connecting to an ERS 8800

- For customers running version 7.1.x: The minimum software release is 7.1.3.1, however the recommended ERS 8800 software release is 7.1.5.4 or later. On switches using 8612 XLRS or 8812XL modules for the links connecting to the VSP 4000 the minimum software version is 7.1.5.4. The “spbm version” on the ERS 8800 must be set to “802.1aq”.
- For customers running version 7.2.x: The minimum software release is 7.2.0.2, however the recommended ERS 8800 software release is 7.2.1.1 or later. On switches using 8612 XLRS or 8812XL modules for the links connecting to the VSP 4000 the minimum software version is 7.2.1.1.
- Diffserv is enabled in the VSP 4000 port settings, and is disabled in the ERS 8800 port settings, by default.

Notes on combination ports for VSP 4000

When the VSP 4000 is reset, the peer connections for all ports, including combination ports 47 and 48 on VSP 4450GTX-HT-PWR+, will transition down. During the reset, the fiber ports remain down, but only the copper ports 47 and 48 come up periodically throughout the reset. The copper ports 47 and 48 come up approximately 15 seconds into the reset, remain up for approximately 60 seconds, and then transition down until the boot sequence is complete and all ports come back up.

The following is an example of the status of the combination ports during reset.

```
CP1 [03/18/70 09:55:35.890] 0x0000c5e7 00300001.238 DYNAMIC SET GlobalRouter HW INFO Link
Down(1/47)
CP1 [03/18/70 09:55:35.903] 0x0000c5e7 00300001.239 DYNAMIC SET GlobalRouter HW INFO Link
Down(1/48)

CP1 [03/18/70 09:55:49.994] 0x0000c5ec 00300001.239 DYNAMIC CLEAR GlobalRouter HW INFO
Link Up(1/48)
CP1 [03/18/70 09:55:50.322] 0x0000c5ec 00300001.238 DYNAMIC CLEAR GlobalRouter HW INFO
Link Up(1/47)

CP1 [03/18/70 09:56:43.131] 0x0000c5e7 00300001.238 DYNAMIC SET GlobalRouter HW INFO Link
Down(1/47)
CP1 [03/18/70 09:56:43.248] 0x0000c5e7 00300001.239 DYNAMIC SET GlobalRouter HW INFO Link
Down(1/48)
```

Cabled connections for both copper and fiber ports

The following limitations apply when the combination ports have cabled connections for both the copper and fiber ports.

- Do not use the fiber port and do not insert an SFP into the optical module slot in the following situations:
  - a copper speed setting of either 10M or 100M is required
  - a copper duplex setting of half-duplex is required

Note:

These limitations are applicable only when auto-negotiation is disabled. To avoid this limitation, use auto-negotiation to determine the speed to 10/100/1000 and to determine the duplex.

- The 100M-FX SFP requires auto-negotiation to be disabled. Therefore, auto-negotiation will also be disabled for the copper port. Configure peer switch to disable auto-negotiation.

Chapter 4: Software Upgrade

Image upgrade fundamentals

This section details what you must know to upgrade the switch.

Upgrades

Install new software upgrades to add functionality to the switch. Major and minor upgrades are released depending on how many features the upgrade adds or modifies.

Upgrade time requirements

Image upgrades take less than 30 minutes to complete. The switch continues to operate during the image download process. A service interruption occurs during the installation and subsequent reset of the device. The system returns to an operational state after a successful installation of the new software and device reset.

Before you upgrade the software image

Before you upgrade the switch, ensure that you read the entire upgrading procedure.

You must keep a copy of the previous configuration file (*config.cfg*), in case you need to return to the previous version. The upgrade process automatically converts, but does not save, the existing configuration file to a format that is compatible with the new software release. The new configuration file may not be backward compatible.

Image naming conventions

The switch software use a standardized dot notation format.

Software images

Software images use the following format:

Product Name.Major Release.Minor Release.Maintenance Release.Maintenance Release Update.tgz

For example, the image file name **VOSS4K.4.2.1.0.tgz** denotes a software image for the VSP 4000 product with a major release version of 4, a minor release version of 2, a maintenance release version of 1 and a maintenance release update version of 0. Similarly, the image file name **VSP4K.3.0.1.0.tgz** denotes a software image for the VSP 4000 product with a major release version of 3, a minor release version of 0, a maintenance release version of 1 and a maintenance release update version of 0. TGZ is the file extension.

Interfaces

You can apply upgrades to the switch using the Avaya Command Line Interface (ACLI).

For more information about ACLI, see one of the following documents, based on the platform you are upgrading:

- *User Interface Fundamentals for Avaya Virtual Services Platform 4000 Series*, NN46251-103
- *Using ACLI and EDM on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-103

File storage options

This section details what you must know about the internal boot and system flash memory and Universal Serial Bus (USB) mass-storage device, which you can use to store the files that start and operate the switch.

The switch file system uses long file names.

Internal flash

The switch has two internal flash memory devices: the boot flash memory and the system flash memory. The system flash memory size is 2 gigabytes (GB).

Boot flash memory is split into two banks that each contain a different copy of the boot image files. Only the Image Management feature can make changes to the boot flash.

The system flash memory stores configuration files, runtime images, the system log, and other files. You can access files on the internal flash through the /intflash/ folder.

USB device

The switch can use a USB device for additional storage or configuration files, release images, and other files. The USB device provides a convenient, removable mechanical to copy files between a computer and a switch, or between switches. In cases where network connectivity has not yet been established, or network file transfer is not feasible, you can use a USB device to upgrade the configuration and image files on the switch.

Note:

The use of the USB port for file transfers using removable FLASH drive is not supported since the USB FLASH drive on all models of VSP 4850 (factory built and converted from ERS 4850) must be treated as a permanent non-removable part of the switch and must NEVER be removed from the switch to ensure proper operation.

File Transfer Protocol

You can use File Transfer Protocol (FTP) to load the software directly to the switch, or to download the software to the internal flash memory or to an installed USB device.

The switch can act as an FTP server or client. If you enable the FTP daemon (ftpd), you can use a standards-based FTP client to connect to the Control Processor (CP) module by using the ACLI log on parameters. Copy the files from the client to either the internal flash memory or USB device.

Saving the configuration

Save the configuration

- When you make a change to the configuration.
- To create a backup configuration file before you upgrade the software on the switch.

After you change the configuration, you must save the changes on the device. Save the configuration to a file to retain the configuration settings.

About this task

File Transfer Protocol (FTP) and Trivial File Transfer Protocol (TFTP) support IPv4 and IPv6 addresses.

Procedure

1. Enter Privileged EXEC mode:

   ```
   enable
   ```

2. Save the running configuration:

   ```
   save config [backup WORD<1-99>] [file WORD<1-99>] [verbose]
   ```

Example

```
Switch:1> enable
```

Save the configuration to the default location:

```
Switch:1# save config
```

Identify the file as a backup file and designate a location to save the file:

```
Switch:1# save config <filename>
```

Variable definitions

Use the data in the following table to use the **`save config`** command.

Variable	Value
backup *WORD<1–99>*	Saves the specified file name and identifies the file as a backup file. *WORD<1–99>* uses one of the following format: • a.b.c.d:<file> • /intflash/<file> • /usb/<file> The file name, including the directory structure, can include up to 99 characters.

Table continues…

Variable	Value
file *WORD<1–99>*	Specifies the file name in one of the following format: • a.b.c.d:<file> • /intflash/<file> • /usb/<file> The file name, including the directory structure, can include up to 99 characters.
verbose	Saves the default and current configuration. If you omit this parameter, the command saves only parameters you change.

Upgrading the software

Perform this procedure to upgrade the software on the switch. This procedure shows how to upgrade the software using the internal flash memory as the file storage location.

To access the new software visit the Avaya support site: www.avaya.com/support. You need a valid user or site ID and password.

Use one of the following options to upload the file with the new software to the switch:

- Use FTP to transfer the file.
- Download the file to your computer. Copy the file to a USB device and insert the USB device into the USB port on the switch.

Important:

For VSP 4850, the use of the USB port for file transfers using removable FLASH drive is not supported because the USB FLASH drive on all models of VSP 4850 (factory built and converted from ERS 4850) must be treated as a permanent non-removable part of the switch and must NEVER be removed from the switch to ensure proper operation.

There is a limit of six software releases that can be stored on the switch. If you have six releases already stored on the switch, then you will be prompted to remove one release before you can proceed with adding and activating a new software release.

For information about removing a software release, see Deleting a software release on page 65.

See the tables below for a list of the upgrade paths that are supported for each platform.

Important:

When both IPv6 **`dhcp-relay fwd-path`** and IPv6 VRRP are configured on a device that runs 4.1 or 4.2 and you save the configuration, the configuration is saved with an **`exit`** command missing. This omission prevents the DHCP Relay configuration from loading while rebooting or sourcing the configuration. This issue is fixed in Release 4.2.1, however the omission still exists

in configuration files saved using 4.1 or 4.2. As a result, if you upgrade from Release 4.1 or 4.2 to 4.2.1 or later with IPv6 VRRP and IPv6 DHCP configured, the IPv6 DHCP configurations will be lost. After the upgrade, reconfigure IPv6 VRRP- and IPv6 DHCP-related parameters, and then save the configuration. The newer release configuration includes the additional **`exit`** command when saved.

Table 7: Supported upgrade paths on the VSP 4850GTS and VSP 4850GTS-PWR+

Upgrade path	Support
Upgrade from 4.0 to 4.2.1	Supported
Upgrade from 4.1 to 4.2.1	Supported
Upgrade from 4.2 to 4.2.1	Supported

Table 8: Supported upgrade paths on the VSP 4450GSX-PWR+

Upgrade path	Support
Upgrade from 4.0 to 4.2.1	Supported
Upgrade from 4.1 to 4.2.1	Supported
Upgrade from 4.2 to 4.2.1	Supported

Table 9: Supported upgrade paths on the VSP 4450GTX-HT-PWR+

Upgrade path	Support
Upgrade from 4.0.40 to 4.2.1	Supported
Upgrade from 4.1 to 4.2.1	Supported
Upgrade from 4.2 to 4.2.1	Supported

Table 10: Supported upgrade paths on the VSP 8284XSQ

Upgrade path	Support
Upgrade from 4.0 to 4.2.1	Supported
Upgrade from 4.0.1 to 4.2.1	Supported
Upgrade from 4.0.50 (TAA compliant and DC) to 4.2.1	Supported
Upgrade from 4.1 to 4.2.1	Supported
Upgrade from 4.2 to 4.2.1	Supported

Table 11: Supported upgrade paths on the VSP 8404

Upgrade path	Support
Upgrade from 4.2 to 4.2.1	Supported

Before you begin

- Back up the configuration files.

- Use an FTP application or USB device to transfer the file with the new software release to the switch.
- Ensure that you have not configured VLAN 4060. If you have, you must port all configuration on this VLAN to another VLAN, before you begin the upgrade.

Caution:

Starting from Release 3.1, VLAN 4060 is not supported, and all configuration on this VLAN from previous releases will be lost after the upgrade.

Note:

Software upgrade configurations are case-sensitive.

Procedure

1. Enter Global Configuration mode:

   ```
   enable
   configure terminal
   ```

2. If you are using the USB port to transfer the files, go to the next step. If you are using FTP to download the files, enable FTP:

   ```
   boot config flag ftpd
   ```

3. Download the files to the switch through FTP or transfer them to the switch through the USB port.
4. Enter Privileged EXEC configuration mode by exiting the Global Configuration mode.

   ```
   exit
   ```

5. Extract the release distribution files to the /intflash/release/ directory:

   ```
   software add WORD<1-99>
   ```

6. Install the image:

   ```
   software activate WORD<1-99>
   ```

7. Restart the switch:

   ```
   reset
   ```

   Important:

   After you restart the system, you have the amount of time configured for the commit timer to verify the upgrade and commit the software to gold. If you do not commit the software to gold and auto-commit is not enabled, the system restarts with the last known working version after the commit timer has expired. This feature ensures you can regain control of the system if an upgrade fails.

8. After you restart the switch, enter Privileged EXEC configuration mode:

   rwa

   ```
   enable
   ```

9. Confirm the software is upgraded:

   ```
   show software
   ```

10. Commit the software:

    ```
    software commit
    ```

Example

The following example is for the VSP 4000, but the same steps apply to other VOSS switches.

```
Switch:1>enable

Switch:1#configure terminal

Switch:1(config)#copy /usb/VOSS8K.4.2.1.0.tgz /intflash/VOSS8K.
4.2.1.0.tgz

Switch:1>exit

Switch:1#software add VOSS8K.4.2.1.0.tgz

Switch:1#software activate 4.2.1.0.GA

Switch:1#reset
```

```
Switch:1#show software
================================================================================
                    software releases in /intflash/release/
================================================================================
VOSS8K.4.2.1.0.GA (Primary Release)
VSP8000.4.2.0.0.GA (Backup Release)

--------------------------------------------------------------------------------
Auto Commit     : enabled
Commit Timeout  : 10 minutes

VSP-8k-R2-BEB-5:1#show software detail

================================================================================
                    software releases in /intflash/release/
================================================================================
VOSS8K.4.2.1.0.GA (Primary Release)
    KERNEL                          2.6.32_int38
    ROOTFS                          2.6.32_int38
    APPFS                           VOSS8K.4.2.1.0int012
  AVAILABLE ENCRYPTION MODULES
    3DES
    AES/DES


VSP8000.4.2.0.0.GA (Backup Release)
    KERNEL                          2.6.32_int38
    ROOTFS                          2.6.32_int38
    APPFS                           VSP8K.4.2.0.0int016
  AVAILABLE ENCRYPTION MODULES
    3DES
    AES/DES



--------------------------------------------------------------------------------
Auto Commit     : enabled
```

```
Commit Timeout  : 10 minutes
```

```
Switch:1#software commit
```

Verifying the upgrade

Verify your upgrade to ensure proper switch operation.

Procedure

1. Check for alarms or unexpected errors:

   ```
   show logging file tail
   ```

2. Verify all modules and slots are online:

   ```
   show sys-info
   ```

Committing an upgrade

Perform the following procedure to commit an upgrade.

About this task

The commit function for software upgrades allows maximum time set by the commit timer (the default is 10 minutes) to ensure that the upgrade is successful. If you enable the auto-commit option, the system automatically commits to the new software version after the commit timer expires. If you disable the auto-commit option, you must issue the software commit command before the commit timer expires to commit the new software version, otherwise the system restarts automatically to the previous (committed) version.

Procedure

1. Enter Privileged EXEC mode:

   ```
   enable
   ```

2. **(Optional)** Extend the time to commit the software:

   software reset-commit-time [<1–60>]

3. Commit the upgrade:

   ```
   software commit
   ```

Downgrading the software

Perform this procedure to downgrade the switch from the current trusted version to a previous release.

Important:

In VOSS 4.2 and later, the encryption modules are included in the image file. Therefore, the load-encryption menu is present but no longer applicable to the current release. You do not require an ACLI command to load it.

Before you begin

Ensure that you have a previous version installed.

Procedure

1. Enter Privileged EXEC mode:

   ```
   enable
   ```

2. Extract the release distribution files to the /intflash/release/ directory:

   ```
   software add WORD<1-99>
   ```

3. Extract the module files to the /intflash/release directory:

   ```
   Software add-module [software version] [modules file name]
   ```

   Note:

   This step applies to downgrades to a software version earlier than VOSS 4.2.

4. Activate a prior version of the software:

   ```
   software activate WORD<1-99>
   ```

5. Restart the switch:

   ```
   reset
   ```

   Important:

   After you restart the system, you have the amount of time configured for the commit timer to verify the software change and commit the software to gold. If you do not commit the software to gold and auto-commit is not enabled, the system restarts with the last known working version after the commit timer expires. This feature ensures you can regain control of the system if an upgrade fails.

6. Commit the software change:

   ```
   software commit
   ```

   Important:

   If you do not enable the auto-commit functionality, you must commit the software change before the commit timer expires. This is an optional step otherwise.

7. Verify the downgrade:
   - Check for alarms or unexpected errors using the `show logging file tail` command.
   - Verify all modules and slots are online using the `show sys-info` command.
8. **(Optional)** Remove unused software:

   ```
   software remove WORD<1-99>
   ```

Variable definitions

Use the data in the following table to use the `software` command.

Variable	Value
activate WORD<1-99>	Specifies the name of the software release image.
add WORD<1-99>	Specifies the path and version of the compressed software release archive file.
remove WORD<1-99>	Specifies the path and version of the compressed software release archive file.

Deleting a software release

Perform this procedure to remove a software release from the switch.

Note:

There is a limit of six software releases that can be stored on the switch. If you have six releases already stored on the switch, then you will be prompted to remove one release before you can proceed with adding and activating a new software release.

Procedure

1. Enter Privileged EXEC configuration mode:

   ```
   enable
   ```

2. Remove software:

   ```
   software remove WORD<1-99>
   ```

Example

The following example is for the VSP 4000 switch, but the same steps apply to other VOSS switches.

```
VSP-4450GSX-PWR+:1>enable
VSP-4450GSX-PWR+:1#software remove VSP4K.4.1.0.0.tgz
```

Upgrading the boot loader image

Warning:

This command is an advanced-level command that upgrades the device uboot image. Only use this command if specifically advised to do so by Avaya Support. Improper use of this command can result in permanent damage to the device and render it unusable.

If the need to use this command arises, instructions on usage will be provided by Avaya Support.

Before you begin

- Transfer the image to the `/intflash/` directory on the switch.

Procedure

1. Enter Privileged EXEC mode:

   ```
   enable
   ```

2. View the current uboot version:

   ```
   show sys-info uboot
   ```

3. Upgrade the boot loader image:

   ```
   uboot-install WORD<1-99>
   ```

Variable definitions

Use the data in the following table to use the **`uboot-install`** command.

Variable	Value
WORD<1-99>	Specifies the full path and filename that contains the uboot image.

Chapter 5: Known issues and limitations

This chapter details the known issues and limitations found in this release. Where appropriate, use the workarounds provided.

Known issues in this release

This section identifies the known issues in this release for the following products:

- VSP 4000 Series
- VSP 7200 Series
- VSP 8000 Series

Device related issues

Table 12: Known issues

Issue number	Description	Workaround
wi01144867	On the port that is removed from a T-UNI LACP MLT, non T-UNI configuration is blocked as a result of T-UNI consistency checks.	When a port is removed from a T-UNI LACP MLT, the LACP key of the port must be set to `default`.
wi01166763	SLA Mon™ tests fail (between 2% and 8% failure) between VSP 4000 devices when you have too many agents involved with scaled configurations.	This happens only in a scaled scenario with more than seven agents, otherwise the failure does not occur. The acceptable failure percentage is 5%, but you may see failures of up to 8%.
wi01168610	VSP 4450GSX: The command **`sys shutdown`** does not change the STATUS LED on the VSP 4450GSX-PWR+ device.	None. This issue does not impact any functionality.
wi01168706	The following error message occurs on VSP 4000 when performing **`shutdown/no-shutdown`** commands continuously: `IO1 [05/02/14 06:59:55.178:UTC] 0x0011c525 00000000 GlobalRouter COP-SW ERROR vsp4kTxEnable Error`	None. When this issue occurs, the port in question may go down, then performs a **`shutdown/no-shutdown`** of the port to bring it up and resumes operation.

Table continues…

Issue number	Description	Workaround
	`changing TX disable for SFP module: 24, code: -8`	
wi01171802	VSP 4450GSX: On a fresh boot, peer ports connected to ports 1/49 and 1/50 bounce and may cause additional transitions in the network.	None.
wi01171907	VSP 4450GSX: CAKs are not cleared after setting VSP 4000 to factory-default.	None. Currently this is the default behavior and does not affect functionality of the MACsec feature.
wi01173026	A reboot with verbose configuration does not allow you to delete a VRF.	This issue occurs only if you save the configuration file in verbose mode and reboot the switch in that configuration. This situation is unlikely to exist; verbose mode is used more as a diagnostic tool. This issue does not impact functionality.
wi01173136	T1 SFP: Shutting down the T1 link from one end of the VSP 4000 or VSP 7200 Series or VSP 8000 Series does not shut down the link at the remote end. You may experience traffic loss if the remote side of the link is not shut down.	This issue occurs only when a T1 SFP link from one end is shutdown. Enable a dynamic link layer protocol such as LACP or VLACP on both ends to shut the remote end down too. As an alternative, administratively disable both ends of the T1 SFP link to avoid the impact.
wi01174787	Using EDM, you cannot create static ARP entries.	Use the ACLI **`config ip arp`** command to create static ARP entries.
wi01175118	On a MACsec enabled port, you may see delayed packets when the MACsec port is kept running for more than 12 hours. This delayed packet counter may also increment when there is complete reordering of packets so that the application might receive a slow response. But in this second case, it is a marginal increase in the packet count, which occurs due to PN mismatch sometimes only during Key expiry, and does not induce any latency.	None.
wi01195988	You cannot use EDM to issue ping or traceroute commands for IPv6 addresses.	Use ACLI to initiate ping and traceroute.
wi01196000	You cannot use EDM to issue ping or traceroute commands for IPv4 addresses.	Use ACLI to initiate ping and traceroute.
wi01197712	On the 40-gigabit ports, the small metallic fingers that surround the ports are fragile and can bend out of shape during removal and insertion of the transceivers. When the fingers	Insert the QSFP+ carefully. If the port gets damaged, it needs to be repaired.

Table continues…

Issue number	Description	Workaround
	are bent, they prevent the insertion of the QSFP+ transceiver. **Note:** This issue is specific to VSP8404QQ ESMs.	
wi01207076	If you configure both IPv4 and IPv6 on a VLAN interface, and then change the IPv6 MTU, the IPv4 MTU is also changed for that interface.	Configure a MTU value, up to 9500 bytes, that is higher than the default. The default MTU for an IPv6-enabled VLAN is 1500 bytes.
wi01207473 wi01223180	On a VSP 4000 Series platform, inPort or in inVlan deny filters do not prevent all packets from reaching the CPU.	None.
wi01208650	The Console gets disconnected frequently when you enable screen trace is enabled (trace screen enable). The error displayed is `Forced log-out after 65535 secs.`	None.
wi01209346	In an IGMP snoop environment, after dynamically downgrading the IGMP version to version 2 (v2), when you revert back to version 3 (v3), the following is observed: • The multicast traffic does not flow. • The sender entries are not learned on the local sender switch. • The Indiscard packet count gets incremented on the **`show int gig error`** statistics command.	Use a v3 interface as querier in a LAN segment which has snoop– enabled v2 and v3 interfaces.
wi01209604	From EDM, you cannot perform a Layer 2 IP PING for an IPv6 address. EDM displays the following error: `No next Hop address found for ip address provided.`	Use the ACLI perform a Layer 2 IP PING.
wi01210104	In EDM, you cannot select multiple 40–gigabit ports or a range of ports that includes 40–gigabit ports to graph or edit. You need to select them and edit them individually. **Note:** This issue applies to products that support 40 Gbps ports.	None.
wi01210286 wi01215642	The IPv4 and IPv6 ICMP redirect functionality does not work as expected. This issue pertains to the **`ip icmp redirect`** and the **`ipv6 icmp redirect-msg`** ACLI commands. If an	None.

Table continues…

Issue number	Description	Workaround
	IPv4 or IPv6 packet is Layer 3-routed back out through the same interface on which a packet came in, two things should happen: 1. The original packet should be sent back out on the same interface on which it came in. 2. If the ipv4 or ipv6 redirect flag is set, an ICMP redirect message should be sent back to the source. Step 1 still occurs, but step 2 does not. In other words, the redirect message is not sent.	
wi01212099	In the COM EDM Plugin command, the Layer 2 Traceroute IPv6 does not work properly and gives the error, `No Such Name`.	Use the ACLI to initiate the Layer 2 Traceroute for IPv6.
wi01212115	On EDM, the port LED for channelized ports only shows the status of sub-port #1, but not the rest of the sub-ports. When you remove sub-port #1, and at least one other sub-port is active and online, the LED color changes to amber, when it should be green because at least one other sub-ports is active and online. The LED only shows the status of sub-port #1.	None.
wi01212591	IPv4 shortcut traffic is going to queue 0 on the non-gateway device of the vIST pair. The packet can be en-queued incorrectly, so if the queue is congested, the packet maybe unexpectedly dropped. If such a packet causes queue congestion, then the incorrect queue would be congested. Note that this WI is specific to the VSP 4000.	None.
wi01212860	An intermittent link-flap issue can occur in the following circumstance for the copper ports of the VSP 7254XTQ or the 8424XT ESM for VSP 8400: If you use a crossover cable and disable auto-negotiation, the port operates at 100 Mbps. A link flap issue can occur intermittently and link flap detect will shutdown the port.	Administratively shutdown, and then reenable the port. **Note:** Avaya recommends that you use auto-negotiation. Disabling auto-negotiation on these ports is not a recommended configuration.
wi01214025	Traffic is forwarded to IGMP v2 SSM group, even after you delete the IGMP SSM-map entry for the group.	If you perform the delete action first, you can recreate the SSM-map record, and then disable the SSM-map record. The disabled SSM-map record causes the receiver to timeout because any subsequent membership reports that

Table continues…

Issue number	Description	Workaround
		arrive and match the disabled SSM-map record are dropped. You can delete the SSM-map record after the receivers time out.
wi01214772	The 4 byte AS confederation identifier and peers configuration are not retained across a reboot. This problem occurs when 4 Byte AS is enabled with confederation.	Reconfigure the 4 byte AS confederation identifier and peers on the device, and reboot.
wi01215220	After you enable enhanced secure mode, and log in for the first time, the system prompts you to enter a new password. If you do not meet the minimum password requirements, the following system output message appears: `Password should contain a minimum of 2 upper and lowercase letters, 2 numbers and 2 special characters like !@#$ %^*(). Password change aborted. Enter the New password:` The system output message does not display the actual minimum password requirements you need to meet, which are configured on your system. The output message is an example of what the requirements may need to meet. The actual minimum password requirements you need to meet are configured on your system by the administrator.	None.
wi01215773	The switch provides an NTP log message that indicates that the NTP server did not synchronize, even though one of the NTP servers synchronized correctly and the NTP stats show that it did.	None.
wi01216535	The `router ospf` entry always appears in the configuration file regardless of whether OSPF is configured. This line does not perform any configuration and has no impact on the running software.	None.
wi01216550	When you use Telnet or SSH to connect to the switch, it can take up to 60 seconds for the login prompt to appear. However, this situation is very unlikely to happen, and it does not appear in a standard normal operational network.	Do not provision DNS servers on a switch to avoid this issue altogether.
wi01217251	If you configure egress mirroring on NNI ports, you do not see the MAC-in-MAC header on captured packets.	Use an Rx mirror on the other end of the link to see the packets.

Table continues…

Issue number	Description	Workaround
wi01217347	A large number of IPv6 VRRP VR instances on the same VLAN can cause high CPU utilization.	Do not create more than 10 IPv6 VRRP VRs on a single VLAN.
wi01217871	If you attach the QSFP+ end of a passive breakout cable to a VSP 4000 or VSP 7200 Series or VSP 8000 Series switch, and the SFP + ends of the cable to a VSP 9000 running Release 4.0.1, the output for the **`show pluggable-optical-modules basic`** command on the VSP 9000 shows an incorrect vendor name and part number. The incorrect information also appears in EDM under the **Edit** > **Port** > **General** menu path.	This issue will be fixed in a future VSP 9000 software release.
wi01221371	On a 10 Gbps port when auto–negotiation is enabled on an operational MLT port and then the second link is made operational, the first MLT link goes into blocking state. This results in traffic loss for all the traffic hashing to the blocked link.	Disable the port and then change the auto-negotiation configuration.
wi01221497	In rare cases when you enable or disable the E-Tree promiscuous or isolated port, MAC address learned for vIST peers will not be displayed in the MAC table. This issue has no traffic impact.	None.
wi01221817	If you disable IPv6 on one RSMLT peer, the switch can intermittently display `COP-SW ERROR` and `RCIP6 ERROR` error messages. This issue has no impact.	None.
wi01222078	If you delete the SPBM configuration and re-configure SPBM using the same nickname but a different ISIS system id without rebooting, the switch displays an error message.	Reboot the switch after you delete the SPBM configuration.
wi01223719	You cannot use EDM to configure SSH rekey and enable or disable SFTP.	Use ACLI to configure SSH rekey and enable or disable SFTP.
wi01223723	EDM displays the user name as Admin, even though you login using a different user name.	None.
wi01223759	You cannot use EDM to view the IPv6 DHCP relay counters.	Use ACLI to view the IPv6 DHCP relay counters.
wi01224076	When you re-enable insecure protocols in the ACLI SSH secure mode, the switch does not display a warning message.	None.
wi01224644	EDM displays the IGMP group entry that is learnt on vIST MLT port is as TX-NNI.	Use ACLI to view the IGMP group entry learnt on vIST MLT port.

Table continues…

Issue number	Description	Workaround
wi01224710	On a VSP 4000 Series untagged ARP packet, ingressing on a Layer 2 VSN interface will honor default the port QOS. Changing port QOS value will not be honored.	Create an ACLI filter that can remark the packet to any Queues .
wi01225023	When port-lock is enabled on the port and re-authentication on the EAP client fails, the port is removed from the radius assigned VLAN. This adds the port to default VLAN and displays an error message. This issue has no impact.	The error message is incorrect and can be ignored.
wi01225045	When multiple ports exist in an MLT and user configures rate-limiting on any one of the ports, the configuration is applied to all MLT members. When a new port is added into the MLT, the rate-limiting configuration of the MLT ports is not applied to the newly added port. It keeps its own rate limiting properties.	Configure rate limiting on the newly added port to match the MLT ports configuration.
wi01225232	When an operational SMLT is removed from a TUNI ISID and is not added to any other VLAN or TUNI ISID, then spanning tree is enabled on this SMLT interface. Spanning tree is disabled when added to VLAN or TUNI ISID. This issue has no impact.	Disable SMLT ports and then remove them from TUNI ISID.
wi01225310	When ISIS is disabled on one of the VIST peer nodes with RSMLT interfaces and it has ECMP routes with the RSMLT Peer as the next hop, the ECMP routes that are being replaced during the transition of the ISIS state now will have a next hop of the local interface. This results in an error message `COP-SW ERROR ercdProcIpRecMsg: Failed to Replace IP Records.`	Enable ISIS on both the vIST peers.
wi01225514	On a VSP 7200 Series 40 Gbps ports with CR4 direct attach cables (DAC), when you manually enable or disable ISIS, the port bounces once.	Configure ISIS during the maintenance period. Bring the port down, configure the port and then bring the port up.
wi01226215	On a VSP 7254XSQ when you swap an existing 1 Gbps copper SFP with another type of SFP, the link does not come up.	Use empty ports to add new ports to your system. When you swap a copper port with a fiber port, re-insert the GBIC 1000BASE-T device, and then remove it. You can also reboot the switch to resolve this issue.
wi01226335	In a rare scenario in Simplified vIST configuration when vIST state is toggled immediately followed by vIST MLT ports are	Before enabling vIST state ensure all VIST MLT ports are shut and re-

Table continues…

Issue number	Description	Workaround
	toggled, one of the MLT ports will go into blocking state resulting in failure to process data packets hashing to that link.	enabled after vIST is enabled on the DUT.
wi01226433 wi01226437	When you configure a scaled Layer 3 VSN (24 Layer 3 VSN instances), route leaking from GRT to VRF on the local DUT does not happen. The switch displays an incorrect error message `Only 24 L3 VSNs can be configured`.	None.
wi01226942	If you use a passive copper breakout cable between a channelized 40 Gbps port on a VSP 8400 and a 10 Gbps port on a 9024XL module in a VSP 9000, the link can occasionally drop. This issue is not seen with the active optical breakout cable.	None.

wi01227818	Low temperature alarms can appear for 40GBASE-LM4 QSFP+ transceivers if you enable DDM monitoring:
	`CP1 [07/02/15 12:26:18.576:UTC] 0x00004686 00000000 GlobalRouter SNMP WARNING Temperature Low Alarm (1/41)`
	`CP1 [07/02/15 12:26:25.016:UTC] 0x00004686 00000000 GlobalRouter SNMP WARNING Temperature Normal (1/41)`
	These messages have no functional impact. The low temperature alarm is cleared in the next DDM monitoring interval.
		None

Limitations in this release

This section lists known limitations and expected behaviors that may first appear to be issues.

Limitations for VSP 4450GTX-HT-PWR+

⚠ Caution:

The VSP 4450GTX-HT-PWR+ has operating temperature and power limitations. For safety and optimal operation of the device, ensure that the prescribed thresholds are strictly adhered to.

The following table provides a description of the limitation or behavior and the work around, if one exists.

Table 13: Limitations for VSP 4450GTX-HT-PWR+

Behavior	Description	Workaround
For high-temperature threshold	The VSP 4450GTX-HT-PWR + supports a temperature range of 0°C to 70°C. In the alpha release, power supply does not shut down at an intended over-temperature threshold of 79°C.	To prevent equipment damage, ensure that the operating temperature is within the supported temperature range of 0°C to 70°C.
For power supply wattage threshold	Software functionality to reduce the POE power budget based on the number of operational power supplies and operating temperature is not available in the Alpha SW image.	Ensure that the POE device power draw is maintained at the following when the device is at temperatures between 61°C and 70°C: • 400W — with 1 operational power supply • 832W — with 2 operational power supplies
For inoperable external USB receptacle	The VSP 4450GTX-HT-PWR+ has an empty external USB receptacle that was not available in GTS models. Software to support the use of the external USB receptacle is not yet available in the Alpha SW image. Therefore the USB port is inoperable.	No workarounds are provided with the alpha image.

General limitations and expected behaviors

The following table provides a description of the limitation or behavior.

Table 14: General limitations and expected behaviors

WI number	Description
wi01068569	The system displays a warning message that routes will not inject until the apply command is issued after the enable command. The warning applies only after you enable redistribution, and not after you disable redistribution. For example, `4k2:1(config)#isis apply redistribute direct vrf 2`.
wi01112491	IS-IS enabled ports cannot be added to an MLT. The current release does not support this configuration.
wi01122478	Stale SNMP server community entries for different VRFs appear after reboot with no VRFs .

Table continues…

WI number	Description
	On a node with a valid configuration file saved with more than the default vrf0 , SNMP community entries for that VRF are created and maintained in a separate text file, snmp_comm.txt, on every boot. The node reads this file and updates the SNMP communities available on the node. As a result, if you boot a configuration that has no VRFs, you may still see SNMP community entries for VRFs other than the globalRouter vrf0 .
wi01137195	A static multicast group cannot be configured on a Layer 2 VLAN before enabling IGMP snooping on the VLAN. After IGMP snooping is enabled on the Layer 2 VLAN for the first time, static multicast group configuration is allowed, even when IGMP snooping is disabled later on that Layer 2 VLAN.
wi01138851	Configuring and retrieving licenses using EDM is not supported.
wi01141638	On a VSP 4000, when a VLAN with 1000 multicast senders is deleted, the console or Telnet session stops responding and SNMP requests time out for up to 2 minutes.
wi01142142	When a multicast sender moves from one port to another within the same BEB or from one VIST peer BEB to another, with the old port operationally up, the source port information in the output of the **`show ip igmp sender`** command is not updated with new sender port information. You can perform one of the following workarounds: • On an IGMP snoop-enabled interface, you can flush IGMP sender records. **Caution:** Flushing sender records can cause a transient traffic loss. • On an IGMP-enabled Layer 3 interface, you can toggle the IGMP state. **Caution:** Expect traffic loss until IGMP records are built after toggling the IGMP state.
wi01145099	IP multicast packets with a time-to-live (TTL) equal to 1 are not switched across the SPB cloud over a Layer 2 VSN. They are dropped by the ingress BEB. To prevent IP multicast packets from being dropped, configure multicast senders to send traffic with TTL greather than 1.
wi01159075	**VSP 4450GSX-PWR+**: Mirroring functionality is not working for RSTP BPDUs.
wi01171670	Telnet packets get encrypted on MACsec enabled ports.
wi01198872	On a VSP 4000, loss of learned MAC addresses occurs in a vIST setup beyond 10k addresses. In a SPB setup the MAC learning is limited to 13k MAC addresses, due to the limitation of the internal architecture when using SPB. Moreover, as vIST uses SPB and due to the way vIST synchronizes MAC adresses with a vIST pair, the MAC learning in a vIST setup is limited to 10K Mac addresses.
wi01210217	The command **`show eapol auth-stats`** displays LAST-SRC-MAC for NEAP sessions incorrectly.

Table continues…

WI number	Description
wi01211415	In addition to the fan modules, each power supply also has a fan. The power supply stops working if a power supply fan fails, but there is no LED or software warning that indicates this failure. Try to recover the power supply fan by resetting the switch. If the fan does not recover, then replace the faulty power supply.
wi01212247	BGP tends to have many routes. Frequent additions or deletions impacts network connectivity. To prevent frequent additions or deletions, reflected routes are not withdrawn from client 2 even though they are withdrawn from client 1. Disabling Route-reflection can create blackhole in the network. Workaround: Bounce the BGP protocol globally.
wi01212585	LED blinking in EDM is representative of, but not identical to, the actual LED blinking rates on the switch.
wi01212034	When you disable EAPoL globally: • Traffic is allowed for static MAC configured on EAPoL enabled port without authentication. • Static MAC config added for authenticated NEAP client is lost.
wi01213040	When you disable auto-negotiation on both sides, the 10 Gbps copper link does not come up.
wi01213066	EAP and NEAP is not supported on brouter ports.
wi01213336	When you configure `tx` mode port mirroring on T-UNI and SPBM NNI ports, unknown unicast, broadcast and multicast traffic packets that ingress these ports appear on the mirror destination port, although they do not egress the mirror source port. This is because `tx` mode port mirroring happens on the mirror source port *before* the source port squelching logic drops the packets at the egress port.
wi01213374	EAP and NEAP is not supported on brouter ports.
wi01219658	The command **`Show khi port-statistics`** does not display the count for NNI ingress control packets going to the CP.
wi01219295	SPBM QOS: Egress UNI port does not follow port QOS with ingress NNI port & Mac-in-Mac incoming packets.
wi01223526	ISIS logs duplicate system ID only when the device is a direct neighbor.
wi01223557	Multicast outage occurs on LACP MLT when simplified vIST peer is rebooted. You can perform one of the following work arounds: • Enable PIM on the edge. • Ensure that IST peers are either RP or DR but not both.
wi01224683 wi01224689	Additional link bounce may occur on the following ports, when toggling links or during cable re-insertion: • VSP 7254XSQ 10 Gbps port • VSP 7254XSQ and VSP7254XTQ 40Gig optical cables and 40 Gbps break out cables

Table continues…

WI number	Description
	• VSP 8200 and VSP 8400 40 Gbps ports with optical cable • VSP 8200 and VSP 8400 40 Gbps ports with optical breakout cable

SSH connections

VOSS 4.1.0.0 and VOSS 4.2.0.0 SSH server and SSH client support password authentication mode.

VOSS 4.2.1.0 changed the SSH server from password authentication to keyboard-interactive. VOSS 4.2.1.0 changed the SSH client to automatically support either password authentication or keyboard-interactive mode.

In VOSS 4.2.1.0, you cannot configure the SSH server to support password authentication. This limitation creates a backward compatibility issue for SSH clients that do not support keyboard-interactive mode, including SSH clients that are part of pre-VOSS 4.2.1.0 software releases. For example, VOSS 4.1.0.0 SSH clients, VOSS 4.2.0.0 SSH clients, and external SSH clients that only support password authentication cannot connect to VOSS 4.2.1.0 SSH servers.

This issue will be addressed in software release VOSS 4.2.1.1 and later. The default mode of the SSH server starting from VOSS 4.2.1.1 will be changed back to password authentication.

Note:

If you enable the ASG feature, the SSH server mode automatically changes to keyboard-interactive. To restore the mode to password authentication, disable ASG by using the **`no asg enable`** command from the ACLI Global Configuration mode.

See the following table to understand SSH connections between specific client and server software releases.

Client software release	Server software release	Support
VOSS 4.1.0.0	VOSS 4.2.0.0	Supported
VOSS 4.1.0.0	VOSS 4.2.1.0	Not supported
VOSS 4.2.0.0	VOSS 4.2.1.0	Not supported
VOSS 4.1.0.0	VOSS 4.2.1.1	Supported
VOSS 4.2.0.0	VOSS 4.2.1.1	Supported

Chapter 6: Resolved issues

Resolved issues

This section details the issues that are resolved in this release.

Fixes from previous releases

VOSS 4.2.1 incorporates all fixes from prior releases, up to and including VOSS 4.2.0.2.

Table 15: Resolved issues in this release

WI reference	Description
wi01143223	Hosts connected to a VSP 4000 system acting as a VRRP backup-master, cannot ping the VRRP virtual IP, if the VRRP session is established over a Layer 2–VSN between the VRRP master and backup-master for that VLAN. However, traffic from the hosts is routed by the VRRP backup-master, and the ARP request for the VRRP virtual IP is resolved. This issue was resolved in this release.
wi01201333	In EDM, you configure a BGP confederation identifier or BGP confederation peers, you cannot configure 4-byte AS numbers. 4-byte-as numbers are not supported. This issue was resolved in this release.
wi01203006	After you create an IPv4 filter with an action of redirect next hop, the traffic does not get redirected to the new route even though the filter is hit and the next hop IP address is reachable. This issue was resolved in this release.
wi01204456	On rare occasions, after a Avaya Virtual Services Platform 8400 reboot, it is possible for one or two ports on ESMs in slots 1 and 2 to fail. These port failures do not occur on an operational system. Ports on ESMs in slots 3 and 4 are not affected. The characteristics of a port failure are as follows: For ESMs 8424XS, 8418XSQ and 8418XSQ: • 40 Gbps and 10 Gbps ports: The port will not establish a link (includes QSFP+, SFP+ and DAC). • 1 Gbps ports: The port may establish a link but will not receive traffic. For ESM 8424XT: • 10 Gbps or 1 Gpbs or 100 Mbps ports: The port will not establish a link.

Table continues…

WI reference	Description
	Depending on the ESM type, the ports that may fail are the following: • 8424XS and 8418XSQ: Port 9 and/or 17 • 8424XT: Port 10 or 18 • 8408QQ: Port 3 or 5 This issue was resolved in this release.
wi01204999	VSP devices as intermediate nodes, do not respond to the link trace request. This issue was resolved in this release.
wi01207396	"In-Discard" counter gets increments continuously between V-IST peer interface while you enable vlacp on T-UNI MLT. This issue was resolved in this release.
wi01207546	In configurations with at least three VRRP nodes with Backup Master enabled on a non-SPB VLAN, the VRRP state may continuously fluctuate between Master and Backup Master. Forwarding is not affected. This issue was resolved in this release.
wi01208362	VSP Talk is referenced in the output of the **`show fulltech`** command although it is not a supported feature. This issue was resolved in this release.
wi01209532	The port LED on the device remains steady amber after removing the SFP+ pluggable from the port. This has no impact on the switch operation. This issue was resolved in this release.
wi01215216	In enhanced secure mode, if your user level is Security or Auditor, the **`show logging`** command is displayed but is not functional. The **`show logging`** command should not be displayed. logging parameters still appear in the help text for the **`show logging`** command, but you cannot access this command if you have the Security or Auditor access level. This issue was resolved in this release.
wi01216496	The output of the **`show cli password`** command provides password rules for admin users. This issue was resolved in this release.